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THE CALIFORNIA SOCIETY FOR THE STUDY
OF SECONDARY EDUCATION

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An Appreciation

MY DEAR MR. SCHADER:

In 1927 you befriended this Society, and thereby public education, by a generous gift that made possible the maintenance of the high standard of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION.

Your gift, and your message on "The Religion of Education" which was published in the April, 1928, number of THE QUARTERLY, *have given new inspiration and increased confidence to thousands of teachers, not only in California, but also in other states and in foreign lands, where* THE QUARTERLY *is read.*

"Our national destiny and perhaps civilization itself," to quote your own words, "even now repose in the ideals and spiritual leadership of the nation's teachers." To these ideals and to this responsibility the teachers of California are committed.

On behalf of the CALIFORNIA SOCIETY OF SECONDARY EDUCATION *I take pleasure in sending you for your library shelves a bound copy of Volume I of the* CALIFORNIA QUARTERLY OF SECONDARY EDUCATION.

Very sincerely yours,

Grace M. Rebok

Managing Director.

MR. CARL F. SCHADER,
Santa Monica, California.

THE California Society for the Study of Secondary Education is a public service corporation in education. Its activities are devoted to the functions of the Junior High School, High School and the Junior College. It seeks the membership and professional co-operation of all teachers and administrators of secondary schools in California; also, the support of others who, either officially or privately, may be interested in the solution of any of the problems affecting the welfare of the students of our secondary schools.

In this first number of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, *the Society presents its ambition to render a special service to the secondary schools of California.*

The Society desires to make the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION *an open forum for those responsible to the public for the accomplishments of our secondary schools. Opportunity to examine manuscripts, with a view to publication, will be welcomed. First consideration, however, will always be given to the publication of the reports of special investigators and investigational committees. In this service* THE QUARTERLY *will be of the highest value to teachers, and its numbers should be preserved for future reference.*

In carrying out the plans and policy of the Society for investigational studies of problems in secondary education, special investigational committees, similar to the Committee of Fifteen, will be organized in co-operation with the State Department of Public Instruction and the departments of education in our universities. Co-operation will also be sought with other agencies conducting investigational studies in Secondary Education. The Society looks forward to the establishment of a special Research Fund by which the expenses of investigational studies may be met.

MEMBERSHIPS

ASSOCIATE MEMBERSHIP *is respectfully suggested for all teachers serving in Junior High Schools, High Schools and Junior Colleges.*

LIBRARY MEMBERSHIP *is suggested for the libraries of all Secondary Schools and for Public Libraries. This insures a complete file of all Periodicals and Reports.*

CORPORATE MEMBERSHIP *is suggested for the administrative group, but is open to any teacher, to the charter limitation of 100 corporate members.*

SUSTAINING MEMBERSHIP *is suggested to co-operating educational associations, to educational institutions, and to private citizens who may desire to have a part in furthering the research work and investigational studies sponsored by the Society.*

CO-OPERATIVE RESEARCH NEEDED

From Hon. Will C. Wood, *Superintendent of Public Instruction*:

"I congratulate California on the organization of the California Society for the Study of Secondary Education. The biggest problems in education today are secondary school problems. They cannot be solved by ex cathedra utterances. . . . California has special problems in secondary education that must be solved in the light of ascertained conditions here in California. The society is needed to ascertain those conditions and to evaluate the results scientifically.

"I am convinced that a Society such as this will command the support of people who are ready to serve their country by making grants for educational research. I am also confident the Society will encourage investigation of the secondary school problem by those engaged in secondary school work."

From Mrs. Susan M. Dorsey, *Superintendent of Schools, Los Angeles*:

"An organization such as the California Society for the Study of Secondary Education is greatly needed to stimulate the investigation of problems in secondary education. Beyond a doubt the school movements of today, especially in high schools, are as rapid and complex as those in the realm of invention and industry.

"The opportunity for collaboration that such an organization offers should insure continued achievement and the utilization of the results of research for the improvement of instruction."

From Dr. Ernest C. Moore, *Director of the University of California, Southern Branch, Los Angeles*:

"There is an immense amount of work in study and investigation for such a society to perform. Through it I think the schools of California should carry on a perpetual self-survey of their work.

"I cannot tell you how much I value co-ordinating agencies of a non-administrative and voluntary kind. They help us to measure each other's gains and they consolidate our undertakings. I hope your Society will be one such consolidating agency, fruitful of much good to our State. I pledge you my personal support and help, in any way I can help, and as a member of the University of California, which receives its students from the high schools, I feel sure that your labors will assist our labors."

From Dr. W. W. Kemp, *Dean of the School of Education, University of California*:

"I can cordially approve this move on the part of the California High School Teachers. It seems to me that it symbolizes the high professional purpose which dominates this body of teachers. It is to be hoped that the new movement may enlist the enthusiastic support of every high school teacher, and also the teachers and school officers in other fields than secondary education. With hearty support on the part of school people the new organization, I am sure, will be able to approach outstanding lay citizens with some assurance of securing their assistance and interest in carrying out the proposed plan."

From Dr. Ellwood P. Cubberley, *Dean of the School of Education, Stanford University*:

"Thank you for sending me a statement concerning the re-organization of the California High School Teachers' Association, and its incorporation into the California Society for the Study of Secondary Education. I hope that this proves a very successful undertaking. The new organization certainly has my very best wishes in its work."

From Dr. Lester B. Rogers, *Dean of the School of Education, University of Southern California*:

"The day of undirected effort in education has passed. If progress is to be made, conditions for co-operative, intensive research must be provided and opportunity for scientific research given to the man competent to study current educational problems. If your new organization is able to initiate and direct such a program, it will more than justify the step you have taken."

From Dr. Fred W. Hunter, *Superintendent of Schools, Oakland*:

"I commend most highly the plans and purposes of the new organization—The California Society for the Study of Secondary Education. In no place in the world is the field so rich for the study of secondary schools. Your organization, if it carries out its purposes, can make a permanent contribution to the progress of education and of American ideals. You may quote me, if you desire, as enthusiastically supporting your organization and its purpose."

From Dr. H. B. Wilson, *Superintendent of Schools, Berkeley*:

"The most unsettled field in the public schools is the secondary education field, including the junior high schools. If your Society can set up and finance an organization which can help determine what the problems are that can be studied, and particularly if you can finance such studies under competent leadership, you will make a contribution not only to California education, but to secondary education in the United States."

From Dr. J. M. Gwinn, *Superintendent of Schools, San Francisco*:

"The California Society for the Study of Secondary Education will find a large and important field for service in investigating and reporting on high school problems. The organization of the Society is timely and the success of the Society will mean much for the future of our high schools."

RECENT DEVELOPMENTS IN THE JUNIOR HIGH SCHOOL FIELD*

JAMES M. GLASS
Director of Junior High Schools,
State Department of Public Instruction, Pennsylvania

TO ASSURE reasonable limitations to this paper on "Recent Developments in the Junior High School Field" our first concern is to define the term "recent." Compared with American educational history the whole junior high school movement is recent. Compared with its own development the last two years of the movement are recent. I have predicted this paper upon the latter definition. In order that I may still further be up-to-date in discussing a movement which advances with the speed of all modern inventions, I shall so far as possible restrict the discussion to developments occurring since our last meeting at Chicago a year ago. Of these more recent developments there have been only fleeting glimpses as we have speeded through the events of the last year or two.

Present Status. Even he who runs may read the signs of the practically universal approval which has today been given to the junior high school movement. This is a recent development of incalculable significance to all public school men and women. Particularly is it a cause of much rejoicing to those who pioneered in the days of slower and more difficult progress. For ten years we have hopefully and patiently awaited the coming of the day when we might say, and you will pardon the present liberty we take in saying, "we told you so."

In July 1924 a questionnaire submitted to city superintendents of centers of 100,000 population and above revealed the fact that of 68 such cities 51 were operating, constructing, or planning junior high school developments on the 6-3-3 plan. This is exactly 75%. The junior high school movement has attained the "passing mark" at least in our large centers of population. Of the 32 cities between 70,000 and 100,000 population, 23 have adopted the 6-3-3 organization. This is 72%. The above data are given for the country as a whole.

I do not have access to data pertaining to smaller cities and communities except in our own state. In Pennsylvania 95% of our twenty cities above 30,000 population are operating, constructing, or planning junior high schools; 54% of the thirteen cities between 20,000 and 30,000; 27% of the 44 cities between 10,000 and 20,000; or of the 77 cities in the state above 10,000, 49% have adopted the junior high school as the focal point of their educational reorganization.

That the movement is spreading to smaller communities is attested by the further fact that of 95 communities in the state between 5,000 and

*Address delivered before the National Association of Secondary School Principals, Cincinnati, 1925.

10,000, 27 communities or 28% are reorganizing on the 6-3-3 or 6-6 plans. These figures do not take account of 6-2-4 organizations, i. e., departmentalized seventh and eighth grades and four-year high schools; the former which we recognize as a preparatory step to the junior high school is frequently desirable as a transitional stage of development but it does not fulfill the generally accepted standard of an integrated three-year organization of grades seven, eight, and nine.

General Acceptance. The last year or two, therefore, has witnessed a steady growth of the movement from larger city systems to smaller cities and to communities bordering between urban and rural populations. The junior high school movement has ceased to be an experiment. It is rapidly becoming a true development of a generally accepted purpose to reconstruct the intermediate period of grades seven, eight, nine and to evolve the unit of transition which shall effectively and permanently articulate elementary and secondary education. The day has passed to present claims for the junior high school. The claims have been granted. The day is at hand to effect functioning of purposes, to evaluate the experience of the past fifteen years and to seek refinements and scientific procedures for further progressive experimentation in organization, administration, curriculum practices, and modern laboratory classroom methods.

Uniformity of Administration. Recent developments in the junior high school field in respect to this universal acceptance of the high school idea have raised the question, which has from the beginning been inevitable, whether the educational system of any state or of the country can long continue partly 8-4 and partly 6-3-3 or 6-6. The adoption of an experimental junior high school in a large city has generally been followed by a decision to place the whole city system upon the 6-3-3 basis. This characteristic development in cities will inevitably prevail, as the movement spreads, in county systems, township units, consolidated schools, and finally become the practice of state and federal plans of public school reorganization.

Nationally the junior high school development has profited much by the sponsorship which recent bulletins from the Bureau of Education at Washington have given it. Bulletin No. 29, 1924, on "Legislation on the Junior High School" by Terry and Marquis of the State of Washington, gives convincing testimony that the states are directing serious legislative attention to the adoption, the standardization, and in many instances to state financial support for the junior high school movement. Thus in recent years there has developed a tendency to give a state-wide legal status to public school reorganization on the 6-3-3 or 6-6 basis. As the reorganization spreads school codes and state laws must be amended to comply with changing conditions. To those charged with responsibility for leadership in amending present state laws, Bulletin No. 29 will become an indispensable aid.

The 5-3-3 Plan. In the South where the practice prevails of an eleven-year public school system two among other significant experiments have

been undertaken in the past year. Atlanta has reorganized its eleven-year system upon the twelve-year basis of the 6-3-3 plan. Superintendent Sutton has today given us an outline of the junior high school development in his school system. A year ago there was distributed at this annual meeting Vol. 1, No. 1 of the "San Antonio Public Schools Bulletin" describing the San Antonio development of a 5-3-3 plan. This plan organizes an elementary school of grades one, five, beginning as is the practice in Texas as 7 years of age, a junior school of grades six, seven, and eight, and a senior school of the ninth, tenth, and eleventh years. Superintendent Rhoades' experiment at San Antonio was made the subject of an article by Dr. Judd in the *Elementary School Journal* of June 1924.

The adaptation of the junior high school plan to 7-4 systems led Joseph S. Stewart to write editorially in the January 1925 issue of the *High School Quarterly* as follows: "The junior-senior high school is being established successfully in many places and the process will go on with various modifications until the 8-4 and 9-4 plans will be no more. In the process of change *The Quarterly* hopes and believes that many 8-4 systems, when they study the facts, will drop a year and reorganize on the eleven-year basis. This dropping of a year will compensate for the extra cost of the junior high school."

Economy vs. Enrichment. Admittedly, the junior high school mission to effect educational reform in harmony with present social standards and with due respect to individual differences is the same in a 6-3-3 or a 5-3-3 plan. The two plans, however, plainly raise the issue whether in 6-3-3 systems the work of grades seven, eight, and nine has been so enriched by the junior high school program of studies as to preserve a twelve-year system, or whether the greater maturity of seven-year-old children entering the elementary school in eleven-year systems makes possible an attainment in five years equal to that which can be secured in six years by the relatively younger children of six years of age entering the elementary school in the twelve-year systems.

The chronological ages of children in grades six, seven, eight in a 5-3-3 plan as developed at San Antonio and elsewhere in the South and Southwest are the same as the chronological ages of children in grades seven, eight, and nine in 6-3-3 plans. The purposes of the junior high school are not therefore affected by the type of reorganization.

However, the junior high school movement has made insistent this other suggestion which concerns the relative effectiveness of five years or six years of elementary education. Furthermore, the mounting costs of public school administration demand that all experiments in platoon systems, duplicate schools, 5-3-3 plans, etc., receive careful study simultaneously with the junior high school movement itself as concomitant problems in the general reorganization of the whole school system.

Unfortunately, most of us have a bias founded upon training and experience which predisposes us to favor a twelve-year or eleven-year system. The same open-mindedness which has thus far so helpfully

characterized the junior high school movement must be extended to include attendant problems in either the elementary or senior high school fields. Much has been achieved toward public school reorganization by the junior high school. Much more must yet be achieved before the movement shall have run its course.

Junior College. A more fundamental question may be involved in the relative merits of a 6-3-3 plan than that of equal scholastic achievement in elementary schools of six or five years or of economy of costs. If the present twelve years of public school education may without loss of actual achievement be reduced to eleven years, there still remains the question whether the twelfth year should be retained and education correspondingly increased. Clearly society today does not require the same amount of education in less time but more education in the same time.

A counter movement which increases public expenditures for education is to be found in the junior colleges. The 5-3-3 plan and the junior college plan may not be so divergent in their effects as they at present appear. The economy possible in a 5-3-3 development may become the means of at least in part making a junior college a financial practicability.

Three Co-ordinate Agencies to Increase and Broaden Public Education. Thus three trends toward a readjustment of present administrative units are operative today, first, a trend to effect economy in elementary education by reducing this unit to five years; second, a trend to stabilize an intermediate school of three years by segregating grades seven, eight, and nine or six, seven, and eight into junior high schools, and a trend to extend the public school system by adding the junior college. All three may yet become co-ordinate agencies in enlarging the scope and enriching the curriculum of a larger free school system. Independent of the problem of financial support, society in its steadily increasing complexities of social, industrial, scientific, and international expansion now needs more free education. Each of us undoubtedly will do well first to work in the specific field in which he is privileged to serve and secondly to preserve an open mind and to suspend judgment until present experiments are consummated.

Variants of the 6-3-3 Plan. As the junior high school development has spread to smaller school systems there has come, in the past year or two, an increased adoption of several variants of the 6-3-3 plan. In the case of the city's adoption of the segregated junior high school, experiment and testing have been followed by city wide planning of the 6-3-3 system. Likewise in the case of smaller cities experiments with modified forms of the 6-3-3 type have been followed by the adoption of similar plans in other communities of an approximately equal size. This development of variant types of the 6-3-3 organization is significant for the future expansion of the junior high school movement, since it is these variant types which will make practicable a uniform state and national type of school administration upon a basis equivalent to that now generally approved in large school systems.

The Modified 6-3-3 Plan. Cities which have an aggregate secondary school enrollment in grades 7-12 between 500 to 1,000 or 1,200 pupils are in some cases adopting a modified 6-3-3 plan by building a joint junior-senior high school building in which one wing is devoted to the junior high school, a second wing to the senior high school, and a common unit between the two wings is composed of auditorium, gymnasium, library, cafeteria, shops, home economics rooms, fine arts rooms, science laboratories, commercial rooms, and administrative offices. One principal administers both units. Usually he acts as supervising principal of the senior high school but delegates supervisory responsibility over the junior high school to an assistant who is also charged with leadership in the specific administrative and curricular problems of grades 7-8-9.

The faculties of the two secondary units in this modified 6-3-3 plan can be segregated as in the case of the large city's 6-3-3 plan except that teachers of health, of fine and practical arts, and of elective subjects may take class schedules in both units. The economy of this modified 6-3-3 plan in regard to cost of construction and operation is readily apparent. The increased facilities in auditorium, gymnasium, library, equipment for fine and practical arts, and the increase in differentiated curricula are equally apparent.

When a school system, which has adopted this joint junior-senior high school building on the modified 6-3-3 plan, expands, the present 6-year secondary building will be adaptable to a junior high school, and a smaller new senior high school building may be constructed to care for growth in secondary enrollment. The plan, therefore, has the virtue of providing modern and adequate facilities for both junior and senior high schools; it makes practicable a present adoption of the 6-3-3 system; and it anticipates the expansion of the school system without again subjecting it to reorganization.

The 6-6 Plan. Communities which have an aggregate secondary school enrollment in grade 7-12 of between 150 to 500 pupils must usually, for financial considerations both of construction and operation, adopt a six-year junior-senior high school plan generally referred to as the 6-6 plan. In these cases one common building serves both the junior and senior high school units. There is one administrative and supervisory leader and one faculty. This type of reorganization on the 6-6 plan has been the subject of several articles in educational periodicals of the past year. Reference should be made to an article in *Educational Review,* February, 1924, by Joseph K. Van Denburg and to a second article in *Educational Administration and Supervision,* October, 1924, by W. W. Brown.

The practicability of the six-year junior-senior high school has been positively demonstrated in many small systems. The advantage is that these systems may be administered uniformly with large systems and thus benefit by the reorganized program of studies. The disadvantage is that some of these six-year secondary schools are too frequently administered as a departmentalized seventh and eighth grade unit and the

traditional four-year high school without achieving the curriculum readjustments so essential to realize the increased effectiveness of the 6-3-3 reorganization.

The Trial of the 6-2-4 Plan. One recent development in this connection which must challenge the serious thought of administrators in small systems is the experience of some city systems that a 6-2-4 organization has not attained a realization of junior high school objectives. These so-called junior high schools which became the targets of criticism in city systems during the first years of the movement are likely to be duplicated in six-year junior-senior high schools unless certain precautions are observed.

The early stages of the junior high school development in large and small systems are occasionally and most unfortunately characterized by a mere readjustment of grades without deliberate purpose to realize the curriculum reorganization inherent in the junior high school plan. Any effort, therefore, in the six-year junior-senior high school to adopt a name without the substance will be followed and rightly so by the same criticism which was directed against so-called junior high schools in large cities a few years ago. No successful line of least resistance can be found which will obviate for a 6-3-3, a modified 6-3-3, or a 6-6 plan the necessity to inaugurate with the adoption of the junior high school a comprehensive reorganization of the program of studies.

Integrating the Ninth Year with the Seventh and Eighth. Particularly strong in a 6-6 system is the tendency to administer the ninth year as the first and initial year of the four-year high school rather than as the third and consummating year of the junior high school. This is largely the crux of the whole matter in a six-year junior-senior high school. Cities have generally conceded that the ninth year is essential to a complete and integrated junior high school. The program of studies cannot be consummated in less than a three year school. The purposes of the junior high school cannot be attained in less than three years. No composite integrated unit of transition between elementary and secondary education can be organized when restricted to the two upper years of the former elementary school. A composite of elementary and secondary education necessitates the integrating of a former high school year, i. e., the ninth, with the seventh and eighth grades.

Moreover, ninth graders in their physiological and psychological development are homogeneous with seventh and eighth grades and not with the tenth, eleventh and twelfth years. In the junior high school ninth graders become leaders of the school life. In the senior high school they are a submerged fourth. In the junior high school ninth graders profit by the training of natural instincts to leadership. In the senior high school they undergo a temporary and frequently a fatal quiescence in their natural inclinations for leadership. The educational implications of their leadership are factors of high import to themselves and to the school unit which they lead.

Modifying Accrediting Relations. The usual defense for administering

the ninth year as part of a four-year high school is the administrative one of facilitating college entrance accrediting. This plea wholly disregards the increased educational advantages to the pupils of the ninth year when this year is administered as the consummating year of the junior high school. The junior high school movement has and should have very little sympathy with a purely administrative contention favoring the continuance of the ninth year as the initial year of a four-year high school. No more significant development can be cited than the steps taken in the last year or two by the North Central Association, by state organizations, and by the junior high school administrators themselves to restrict college accrediting relations to the tenth, eleventh and twelfth years by reducing requirements from 15 to 12 units. The next speaker, Superintendent Gosling, Madison, Wisconsin, who began his helpful service to the junior high school movement as principal of one of the pioneer schools over which the chairman of this meeting today presides, has been a leader in the North Central Association work to reduce admission requirements to 12 units earned in the tenth, eleventh and twelfth years.

Until the domination of the colleges over the ninth year is removed the integration of the junior high school program of studies will continue under a heavy if not fatal handicap. The present threat of the disintegration of the ninth year from the seventh and eighth year in even segregated junior high schools of city systems is one outstanding fact of the investigation which under the auspices of the Commonwealth Fund the writer conducted during 1923 in fourteen municipal systems distributed in all sections of the country. This condition which constitutes a serious menace to city junior high schools has been discussed in detail in the report of the investigation published in November, 1924, as *Monograph No.* 25 by the University of Chicago.

The tendency, therefore, to administer the ninth year because of prevailing college entrance requirements as part of the four-year high school in city systems even when this ninth year is part of a segregated junior high school is immeasurably magnified when the junior high school is organized as part of a six-year junior-senior high school. Yet the junior-senior high school development must for undeniable reasons of economy comprise a single administrative and instructional organization, a common building and a common operation for both units.

Uniformity Dependent on Change in Admission Requirements. But the 6-6 development upon which rests largely the realization of state and national uniformity in public school administration should respect the experience of city systems in recognizing the distinct purposes of the junior and senior periods, the distinctions between their programs of studies, the distinctions between early adolescent and mid-adolescent development, and the implication of these distinctions of comparatively immature and mature stages of adolescent growth in respect to the social activities and guidance programs and to methods of instruction.

Furthermore, the leaders of the junior high school development in both 6-3-3 and 6-6 plans should unite with other agencies now operating

to change accrediting relations consistently with the fundamental changes in public school organization inherent in the junior high school movement whether a 6-3-3 or 6-6 plan. Upon this modification of college entrance requirements hinges largely the whole question of whether the junior high school in a 6-3-3 or 6-6 plan becomes an integrated unit of grades 7-8-9.

The past two years have given some evidence that administrators of six-year junior-senior high schools are alert, as in the main they were not four years ago, to the need of administering the junior and senior units with the same regard for their distinctive purposes and programs of studies as prevails in the 6-3-3 plan. It is earnestly to be hoped that leaders in the 6-6 plan may demonstrate as the *Arkansas Course of Study for Junior High Schools*, published by the State Board of Education in 1924, states: "The organization of a system of schools upon the six-six plan or the six-three-three plan is a distinction without a difference."

Reports from the Field

New York City. In the early part of 1924 a committee appointed by Dr. Ettinger of New York City submitted a report which was published under the title *"Survey of the Junior High Schools"*. This report gives the present development of the junior high school movement in New York City, the types of organization effected, courses of study, organization, data, statistical comparison of pupils' records in the junior high school and senior high school, guidance, social activities, training of teachers, etc. The report closes with this statement: "Your committee recommends, in view of the fact that the development of a system of junior high schools has been decided upon as an educational policy, and in view of the results of this survey, that steps should be taken to extend the system of junior high schools, term by term, as far as practicable, with the ultimate aim of relieving senior high schools from all, or nearly all, the pupils of the first year, and of having all, or nearly all of the seventh, eighth, and ninth year pupils included in junior high schools."

Chicago. One of the most important victories won by the junior high school movement in the last year was the adoption of the junior high school by Chicago. In spite of determined opposition, Superintendent McAndrew inaugurated five junior high schools in September, 1924. An associate superintendent has been placed in charge of the development. A comprehensive study is being made of the reconstruction of the curriculum. Among the publications of the year special reference should be made to the *Course of Lectures on the Junior High School* in May, 1924, given before a group of Chicago principals by members of the faculty of the University of Chicago.

Rochester. Another publication in bulletin form which appeared in 1924 was a report designated as *The Junior High Schools of Rochester, New York.* After a decade of experiment Rochester is able to speak with authority upon the junior high school movement and its report has received a well deserved recognition. Particularly noteworthy are the two sections

of the report upon "Results" and "Costs"; information from the field of practical experiment which all have eagerly awaited.

Monroe, Wisconsin. While preparing this paper the February issue of the *School Review* was received. As a fourth report from the field, I want to commend the article on "Five Years of the Junior High School Idea in a Small City", by Superintendent L. R. Creutz, Monroe, Wisconsin. The article gives convincing testimony of the efficacy of the junior high school idea to vitalize a whole school system. The article reveals, also, in an interesting manner the transformation which so many junior high schools in recent years have experienced in the process of converting the name into the substance.

Recent Books

Junior High School Life: The Philadelphia survey made in 1922-23 by the Pennsylvania State Department of Public Instruction has been followed by a junior high school development which includes today twelve schools in operation and nine new authorized. Out of the Philadelphia development has come a contribution to junior high school literature published in July, 1924, which has already taken first rank in the fields of guidance and social activities; this is the book by Thomas-Tindal and Myers, a Macmillan publication under the title ***Junior High School Life.***

Junior High School Education: A general discussion of the junior high school movement which has been widely used in the past year in professional courses in ***Junior High School Education*** by C. E. Davis, a World Book Company publication. The book is a valuable and comprehensive treatment of the junior high school movement up to 1924, the date of its publication.

The Psychology of the Junior High School Pupil: The junior high school movement has from its beginning been in dire need of dependable studies of early adolescent psychology. A valuable contribution to this field was made by Pechstein and McGregor in the ***Psychology of the Junior High School Pupil,*** published by Houghton-Mifflin Company also in 1924. Section I of the book is a general discussion of early adolescent psychology and Section II the psychology applied. The book is theory and practice combined.

Junior High School Curricula is the title of another book coming from the Macmillan Press in 1924 by H. C. Hines. The book is a helpful compilation of curricular practices in the junior high school as these practices have both been enunciated as objectives and worked out in the classroom.

Teacher Preparation. The literature in the junior high school field was practically doubled in 1924. Undergraduate and graduate students have today a bibliography which is immeasurably richer than was accessible even two years ago. The popularity of junior high school courses in summer schools and in graduate work has not abated in the past year. In fact the steady growth in the establishment of junior high schools correspondingly increases the number of student and teacher applicants for junior high school courses. Steadily the conviction grows that experience however successful in any other field is inadequate preparation for teacher service in the junior high school where so many new and unsolved problems confront each faculty.

Particularly is it important that teachers irrespective of their subject interests take at least one general course in the Principles and Purposes of the Junior High School. Every incentive possible to earn college certifi-

cation during service, particularly in the way of salary bonus, should be afforded to teachers who without college degrees are transferred or appointed to junior high school positions. I am firmly of the opinion that all junior high school principals have a most wholesome respect for the grade teacher of experience who accepts the professional challenge to qualify during junior high school service for a college degree. Such a teacher offers a combination of tested adaptability to the junior high school age, additional preparation built upon a background of experience, and a professional attitude which make him or her an indispensable contributor to the solution of the manifold and perplexing problems confronting every principal.

Supervision of Instruction. Supervision of instruction has received in the past year an impetus which augurs well for this important factor in promoting the progressive improvement of actual classroom achievement. The practice has spread to many large systems of delegating responsibility for the junior high school development to associate superintendents and directors of junior high schools who partly or wholly devote their time to junior high school supervision. In fact the adoption of responsible supervision emanating from the superintendent's office is almost universal in all large city systems. Concentration upon the problems of curriculum reconstruction and classroom supervision, thereby secured, will promote real progress.

To mention specifically one instance, Trenton, New Jersey, has in the last two years appointed a supervisor of instruction in each of its present three junior high schools. This supervisor of instruction is a teacher of experience promoted from the ranks who spends her entire time in aiding other teachers in working out the problems of present day socialized classroom procedures and in progressively reconstructing courses of study.

Curriculum Reconstruction. A year ago this section meeting was wholly devoted to a discussion of curriculum reconstruction as revealed in the plans for reorganizing courses of study at Denver, Detroit, Los Angeles, Pittsburgh, and Rochester. These discussions from the field are noteworthy of a general purpose gradually spreading in the junior high school movement to attack scientifically the tremendous task of curriculum reconstruction. The papers read a year ago are published in the 1924 *Proceedings of the National Association of Secondary School Principals.*

The past year or two has witnessed a country-wide crystallizing of the conviction that the enacting clause of a real junior high school is a reorganized program of studies. Dr. Judd said to the Chicago principals last May that "the real business of the junior high school is to organize a new curriculum, organize a new body of constructive material which shall be richer and better for the children. That is the only legitimate motive for this organization." When this conviction becomes general the junior high school movement will be launched definitely in the direction of the real junior high schools for which some critics like Diogenes with his lantern have claimed to have sought in vain. If Diogones would abandon his antiquated lantern and seek where the searchlight of comprehensive

scientific efforts at curriculum reconstruction have been turned upon the junior high school program of studies he would find in steadily increasing numbers the objects of his seeking.

Public Interest. Boards of education, parent-teacher associations, chambers of commerce, and laymen generally are being sold, as Superintendent Sutton has told us today, upon the junior high school idea. It is no longer necessary to plead against the settled conviction of past practice in school administration but, as in our own state campaign for the junior high school movement, we have found in the past two years a change in public reactions and an earnest and general inquiry to know more definitely and specifically what the purposes and plans of the junior high school are. The response today even in the layman's mind is quick to admit the common sense of the junior high school philosophy. Laymen enthusiastically commend the purposes of the junior high school, to reduce educational mortality, to eliminate the gap between elementary and secondary education, to promote individual justice by the adaptation of educational offerings to individual needs, to convert the school for early adolescent youth into a rich spontaneous life adaptable to the natural and buoyant instincts of real girls and boys, to train them to be active participating junior citizens of a living school community, and to make the early adolescent age what it should be—a joyous experience teeming as it is with an altruism and unsophisticated idealism which some one has characterized as "the golden age of life when God comes closest to the spirit of man". When the layman catches this vision of the junior high school we may trust his native American common sense to say "Amen" with no uncertain emphasis.

Not least among the recent developments in the junior high school field was the appearance in *Collier's* for October 25, 1924, of an article on "How Can We Get Better Schools—Here's the Way". The tenth plank in that Better School Program reads as follows:

> "Readin' and writin' and 'rithmetic, the 'common essentials of education, can for the most part now be acquired by the end of the sixth grade. By converting the next year into an experimental year to study each child as an individual problem, every youngster can be given an opportunity, before the school lets go of him, to try his hand at something he likes and that he can learn to do well.
>
> "The junior high school principle—of special training for the years of early adolescence—is sound. A school that stresses life interests, rather than college entrance requirements, is of particular value at this period of development. Every youngster can do something, if he likes it and will keep at it, well enough to succeed. For a school to 'set him on his feet' by finding out what that something is, and giving him a chance to acquire confidence and satisfaction through doing it, is fine work. In country districts as in cities, the junior high school, which is the logical place for this try-out work is practicable. It is no more difficult to have a 'union' junior high than a senior high, such as may now be found in any state."

Present Trends in Program of Studies. Several recent developments in respect to the progressive growth of the program of studies are indicative of three present trends, first, to increase the core curriculum or body

of constants; second, to develop true composite general courses of study, and third, to continue the process of enriching the curriculum.

Increase of Core Curriculum. From the beginning of the movement differentiation has been increasingly replaced by the core curriculum. This trend was inevitable as comprehensive of the fundamental purposes of the junior high school became clearer and more general. Increased differentiation in the senior high school throws an increased burden upon the junior high school to guide its pupils intelligently to wise choice of elective subjects. Each elective subject should be preceded by an exploratory try-out of aptitudes and capacities for the elective. Consequently, as exploratory courses have increased, elective subjects have been both deferred to later semesters and reduced in amount.

The most serious objection raised to the junior high school movement in Chicago last spring was the early stratification of early adolescent children. Exploratory courses required of all pupils and the growth of the core curriculum enhance the socially integrating power of the junior high school and constitute an effective rebuttal to the objection of premature social disintegration. This development of socially integrating power, evidences of which may be found in all curriculum reconstruction of recent years, is not primarily a concession to popular demands but is an assurance that the basic purposes of the junior high school shall dominate in the organization of the program of studies. These purposes clearly mean that exploration and guidance should precede differentiation and that differentiation should be gradual, and initial only in extent.

Co-ordinate and Composite General Courses. The growth of the core curriculum is naturally paralleled by the second and third trends to refine general courses of study and to enrich the curriculum not merely by electives but by constants. General courses of study are passing through two stages, the co-ordinate and composite. For example: In most cases social studies are still in the co-ordinate stage in which U. S. history, community civics, vocational civics, economic civics, are administered as co-ordinate units of instruction. On the other hand a few experiments are being tried to fuse these co-ordinate elements, in some cases also with geography, into a truly composite and reconstructed social science course. A fundamental reconstruction of this nature must proceed slowly. Recent developments, therefore, do not give evidence of a consummation of truly composite courses and of their general adoption in the classroom but evidence is not wanting that the experiments are being continued.

Enrichment of Curriculum

Science. In respect to the third trend, the enrichment of the core curriculum, three additions among others may be cited. Science is being adapted to the seventh and eighth grades. Courses of study and suitable textbooks condition this development. The efforts to adapt ninth year general science to grades 7 and 8 have been discouraging. These latter grades require both new courses of study and new textbooks. New

York State has at the present moment such a course of study in course of preparation. Science in the early years of the junior high school is needed for two reasons, first, for its exploratory values, and second, for the initiation of a science constant which shall be progressive and continuous through the whole six years of the secondary school.

If secondary education is to be shaped by present-day needs, and it must be so controlled, then the youth of today should be prepared intelligently to comprehend and safely to live in the modern world whose well-being and progress are conditioned by the most phenomenal scientific advance world history has ever known. Scientists have recently warned us that "science will become either the servant or master of man". If science is to be the servant of our race then it is high time that our youth became universally informed upon the scientific status of modern life. Let me repeat a statement made two years ago, viz., "the junior high school can render a service of incalculable value to the next generation if by the introduction of a science constant into the core curriculum of grades 7, 8, and 9 it can initiate a continuous course of science through the whole core curriculum of the secondary school."

Economic Civics. A second unit of instruction, comparatively new to the junior high school program of studies, which has recently in some schools been incorporated into the social science course of study is elementary economics or economic civics. As community civics and vocational civics have become established in the social studies field this third constituent of a complete study of present day social and industrial life is finding a place among required subject materials. Manifestly, a social science course of study must include the elements of economics if the objective of social studies, as Van Denburg defines it, of "getting along with each other", is to be fulfilled. Getting along with each other involves not merely social harmony but also industrial and economic harmony. Both the national and the world-wide import of teaching elementary economics in junior high schools before compulsory education laws release children from school attendance, may be gauged by reference to present international plans which, like the **Dawes Reparations' Plan,** seek to reclaim the world to a sound economic basis.

In the February, 1925, issue of the *Review of Reviews* appeared a short three-page article under the attractive title "Teaching Prosperity" by Alvan T. Simonds, which should be read by every curriculum maker working in the junior high school field. It will stimulate your purpose to read the whole article if I quote the last paragraph. Mr. Simonds summarizes his plea for "Teaching Prosperity" in the schools by saying: "Economic science and social science can show us how to prevent many disorders that tend to destroy prosperity. Let us seek through the schools and the press to popularize this knowledge. The parent and the business executive will gladly welcome it. The coming generation of adults will be wiser in regard to preserving economic health, as the present generation is more intelligent in regard to the preservation of bodily health. Let us

learn and let us teach our youth not only how to keep well but how to keep well and prosperous."

Junior Business Training. A third unit of instruction, which is not wholly new in the past year or two but which in that time has increasingly been incorporated among the required constants of the program of studies, is junior business training or the elements of business. This constant is also the response made by curriculum builders to society's request that secondary education conform to present day social needs.

Junior business training both enriches the curriculum and at the same time provides an exploratory course which will tend to restrict choices of later commercial courses to positive cases of aptitude for commercial education and to reduce the vicious negative choices of the commercial curriculum because of a greater disinclination to an academic or other curriculum. Junior business training is an adaptation to the commercial curriculum of the general or prevocational course of study characteristic of other subject fields. Junior business training is another contribution to our ever-growing body of required materials which is composed of many general educational values in commercial education. It proposes to teach all pupils the common practices of the commercial or business world which are a universal need irrespective of future vocational placement. The course contains among other features of its rich content a study of single entry bookkeeping, filing, budgeting, bank practices, fire and life insurance, postoffice, railroad, telegraph, shipping and traveling information and a study of other common business needs of people who must conform in daily association with established practices of the commercial world.

Reaction in Elementary and Secondary Schools. Finally evidence is not wanting in recent developments in the junior high school field that this intermediate unit in the public school system is reacting, by reason of its strategic intermediate position, upon the whole school system. Witness the extension to the elementary school and to the senior high school of curriculum reconstruction (the Third Yearbook of the Department of Superintendence is this year devoted to the elementary curriculum), of guidance, the secondary school's social program, the longer school day and period which condition modern socialized classroom procedure. In fact, the whole present trend toward scientific method in school administration, curriculum building, and achievement testing which were vital to an educational reconstruction so far-reaching as the junior high school movement has spread far beyond the confines of grades 7, 8, and 9. Thus the promise is bright that the highest tribute which may yet be paid to the junior high school movement is that it has been an agency to humanize secondary education and to modernize the whole public school system.

STATUS OF SCIENCE IN THE PUBLIC HIGH SCHOOLS OF CALIFORNIA

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THE data given here are a part of a study of the accredited high schools of California for the school year of 1923-1924. The study was made with the purpose of determining with some degree of exactness what science subjects are actually taught in the high schools of California, the sequence of the subjects in the four years of the senior high school, the relative enrollments in the various subjects, and the actual teaching assignments among the science teachers of the state. This fundamental factual information seems prerequisite to any discussion of the preparation and suitable training of science teachers for these schools. The scources of the data were the October and December reports of the high school principals to the State Commissioner of Secondary Education and to the schools committee of the Academic Senate of the University of California, the programs of studies of the schools and the Directories of the Secondary Schools of California for 1923-1924 and 1924-1925. The schools studied were the 302 accredited day, public high schools for the school year of 1923-1924. Evening, trade and private high schools are not included. For convenience in making comparisons, the schools were grouped as:

A. Small schools, enrolling under 200 pupils.
B. Medium-sized schools, enrolling from 201 to 500 pupils.
C. Large schools, enrolling over 500 pupils.

I. Historical. A study published in 1924 by Bailey, Foster and Erwine[1] showed the trends in science courses in California from 1904 to 1923. In 1904, only five science subjects appeared in the program of studies of the California high schools, physics, chemistry, botany, physiology and physical geography. In the twenty years since 1904, the curves which represent the schools offering physics and chemistry are shown to practically parallel the curve which represents the rise in the number of high schools in the state. On the other hand, the curves representing the careers of physical geography, botany and zoology begin to drop about 1914, and by 1924 they have practically vanished from the picture. Biology and general science made their appearance about 1907, and by 1914 when the special biological and earth science began their decline, the two new subjects had started on a spectacular upward curve, roughly parallel to each other. These curves are still climbing.

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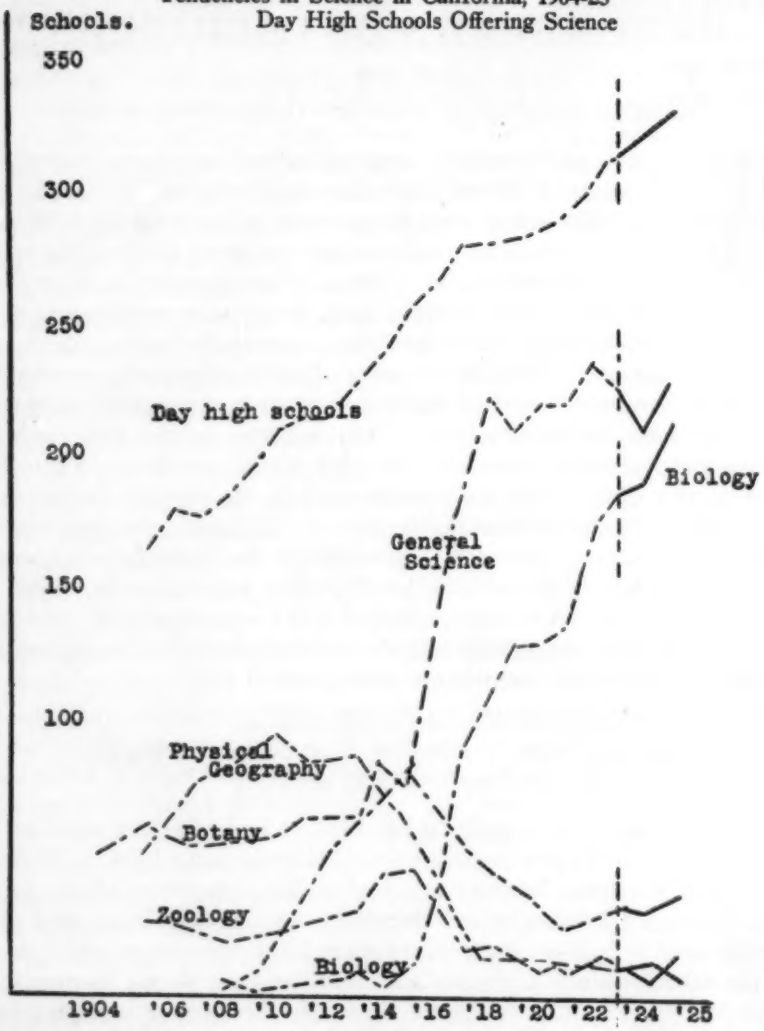
*Miss Bishop made "The Status of Science in the Public Schools of California" her major study during a year of graduate work at the University of California, 1924-25.

[1]Bailey, Foster, Erwine. *Science Offered in California High Schools,* 1922-1923, (Oakland) University High School Journal, Vol. IV, March, 1924.

FIGURE 1
Tendencies in Science in California, 1904-25
Day High Schools Offering Science



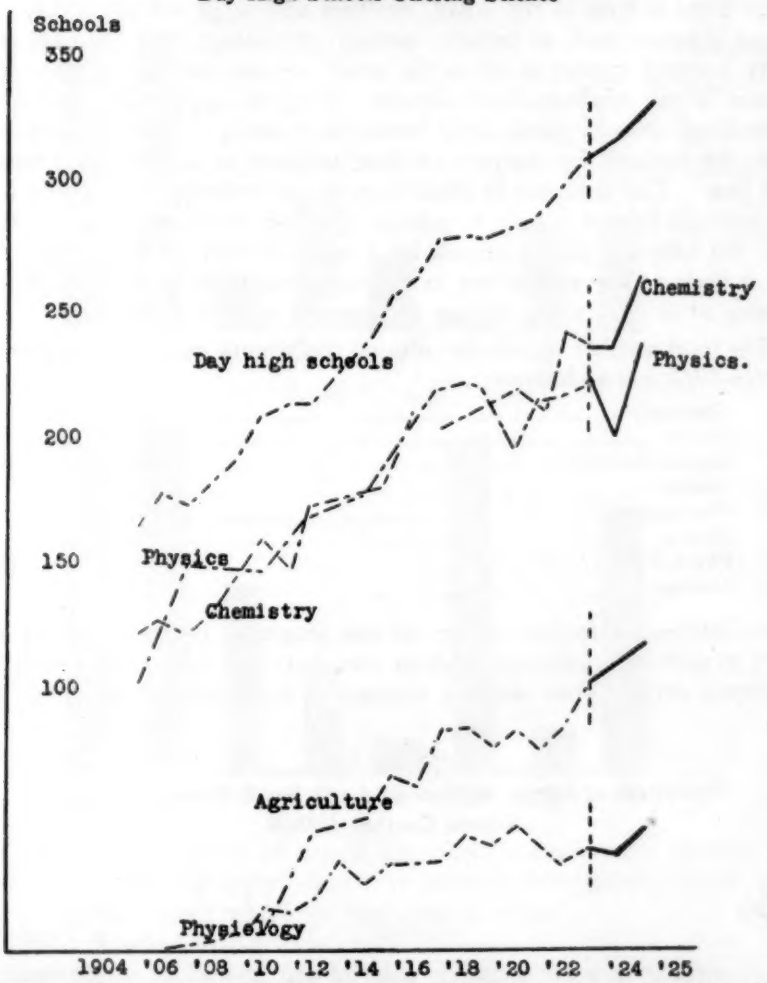
ORIENTATION

The Bailey-Foster-Erwine study of 1922-23[2] was continued to include the school years 1923-24 and 1924-25. Figures 1 and 2 show the curves for the earlier study in dotted lines, and the new data added in solid lines. Figures for 1904-05 and 1914-15 were selected from their study and the new figures for 1924-25 were added, thus giving a picture of the situation at ten-year intervals since 1904 in this state.

The Bailey-Foster-Erwine study calls attention to the steady rise of the high school curve (figures 1 and 2) during the years 1904 to 1923, and to the almost parallel rise in the curves of physics and chemistry courses offered during those years. Only five sciences were taught in 1904-05, but physiology appears in 1905-06, biology and general sciences in 1907-08 and agriculture in 1909-10. By 1914-15, botany, zoology and physical geography have either reached their peak or passed

[2]Bailey, Foster and Erwine, *Science Offered in California Day High School*, 1922-23, University High School Journal, Vol. IV, p. 146, March, 1924.

FIGURE 2
Tendencies in Science in California, 1904-25
Day High Schools Offering Science



it and begun their decline. By 1922-23, zoology and physical geography have almost reached the vanishing point and botany is making a feeble struggle for life. The rise of physiology was steady but slow until 1920, when it began to lose ground. Since 1922, a slight upward tendency begins to appear. It seems probable that the recent rises in these curves may be due to the increasing number of large schools in which these subjects appear with greater frequency than in the smaller schools. Biology, appearing in the schools in 1907-08, made small progress until 1915, when it began a sensational rise which placed it in 190 schools in nine years. This rise is still continuing, 217 schools offering biology in 1924-25. The rise in biology parallels the drop in botany, zoology, and physiology, indicating that it replaced those subjects very widely in the curricula of the state high schools. General science was a lusty infant from the start. In 1907-08, one school offered it. Its rise was immediate and spectacular and by 1921-22, 238 schools had added it to their programs. It then declined somewhat for two years, but in 1924-25 it again shows a decided upward swing.

II. The Present Situation. In the school year 1924-1925, chemistry, physics, biology and general science are the "big four" of the science situation. This is true in the small, medium and large schools alike. The special sciences such as botany, zoology, physiology, and physical geography scarcely appear at all in the small schools and are a very minor feature in the medium sized schools. They do appear to some extent in the large schools, particularly botany and zoology. This automatically limits the demand for teachers of these subjects to a very small number each year. The situation in physiology is not entirely clear. It is listed as a separate subject in only 41 schools of which 33 are in group C. However, the adoption of a textbook by a large number of schools indicates that it does appear somewhere in the curriculum, probably with physical training or as part of the biology and general science work.

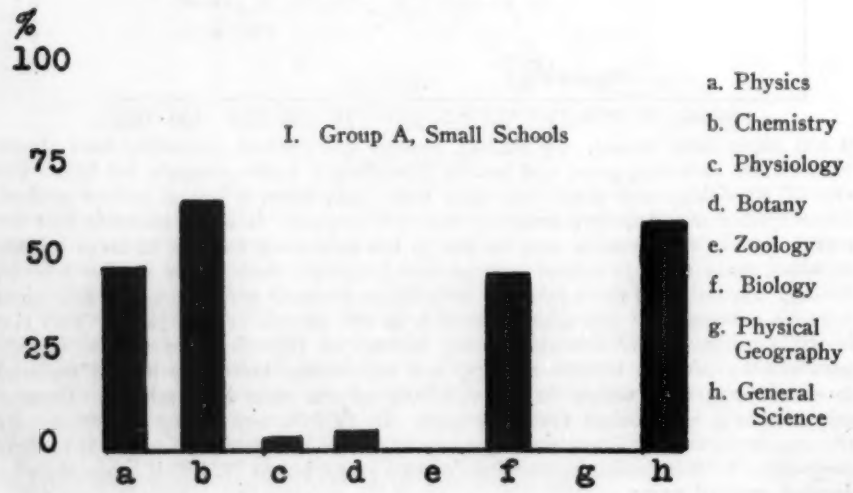
The total number of schools offering the science subjects in California in 1923-1924 was as follows:

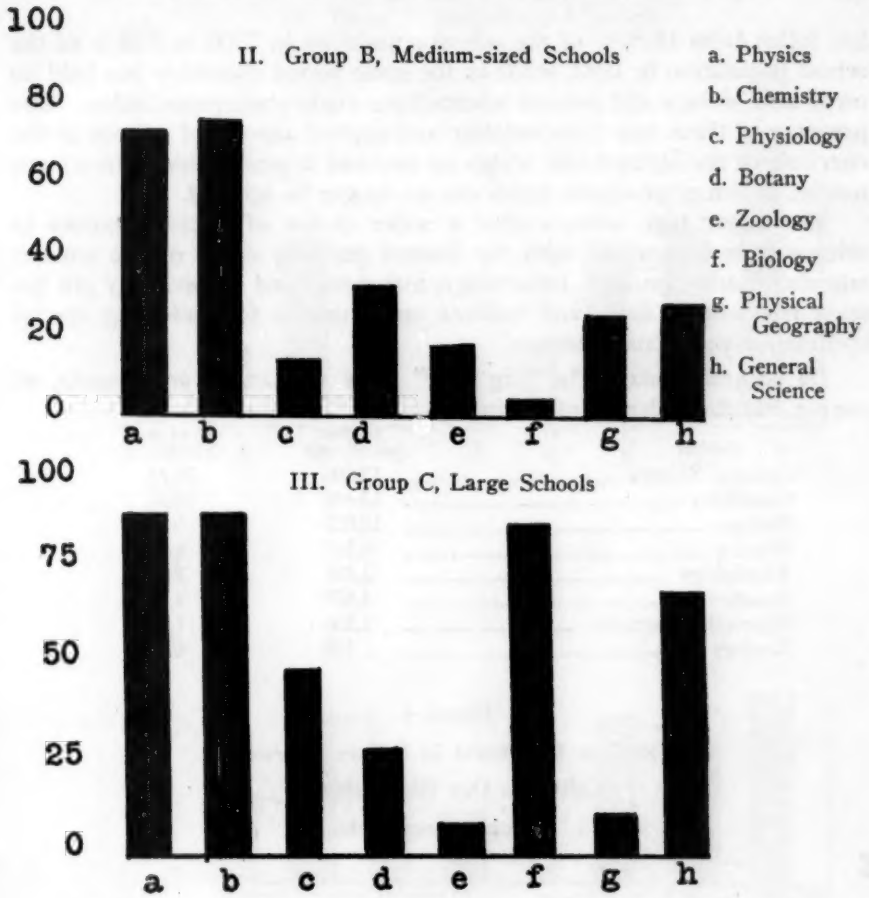
Chemistry	235	schools
Physics	204	"
General Science	204	"
Biology	191	"
Physiology	41	"
Botany	32	"
Physical Geography	10	"
Zoology	7	"

An interesting feature of the present programs is the increasing tendency to split the traditional subjects into short unit courses of a distinctly vocational drift. Thus we find courses in radio telegraphy, D. C. and

FIGURE 3

Percentage of Large, Medium-sized and Small Schools Offering Science Courses, 1923-24





A. C. electricity, physics of sound for music majors, auto electrics and the like. The applied aspect of science subjects is especially noted in the Smith-Hughes schools where we find such titles as:

Science Applied to Agriculture.

Applications of Botany (or Physics or Entomology or Chemistry) to Problems of the Home and Farm.

Industrial Science.

Demand for Applied Aspects of Science. It is clearly apparent that a strong current of opinion is setting in the direction of the practical and interpretative values of high school science. There is a growing recognition of the demand on the part of the pupil and the community that the science the pupil gets in high school shall be not only good, but "good for something", to use his own phrase, in the interpretation of the complicated world in which he finds himself. He is balking at the courses in science which are so pure that they are "unsullied by any actual use". There is food for thoughtful reflection on the part of physics teachers, for example, in the fact that the enrollment in physics throughout the United States

has fallen from 18.88% of the school population in 1900 to 9.13% of the school population in 1922, while in the same period chemistry has held its own,[8] and biology and general science have made phenomenal gains. The presence of these new interpretative and applied aspects of science in the curricula of the high schools brings up new and urgent problems in science teacher training, problems which can no longer be ignored.

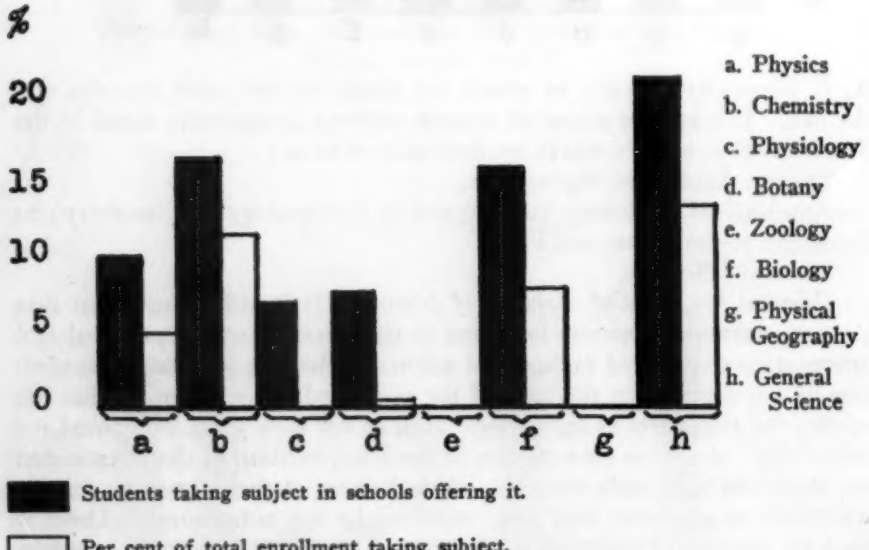
The larger high schools offer a wider choice of elective courses in science than is possible with the limited teaching corps of the smaller schools. Radio, geology, mineralogy, astronomy and bacteriology are the most frequent of these and indicate opportunities for following special aptitude or vocational interests.

III. Enrollments. The "big four" show the largest enrollments, of course, but the order is interesting:

Subject	Subject enrollment	% of total enrollment
General Science	13,606	10.75
Chemistry	13,449	10.7
Biology	12,021	9.5
Physics	6,167	4.9
Physiology	3,495	2.7
Botany	1,670	1.3
Physical Geography	1,536	1.2
Zoology	158	0.12

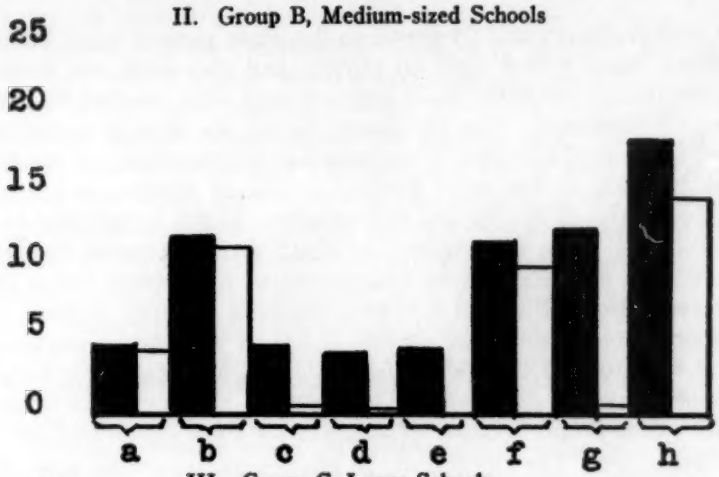
FIGURE 4

Student Enrollment in Science Courses,
California Day High Schools
I. Group A, Small School

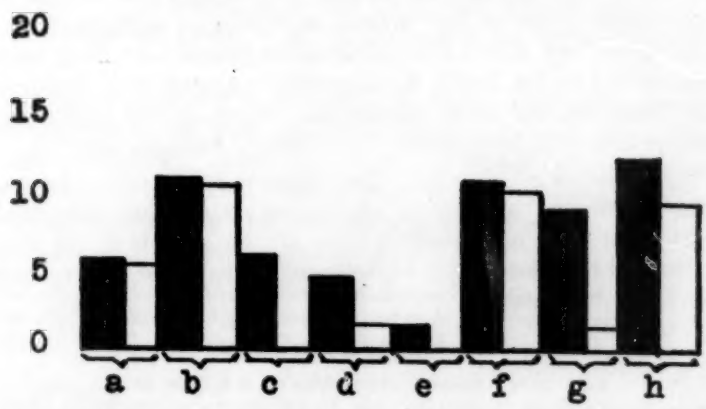


[8] *U. S. Bureau of Ed. Bull.*, 1924, No. 38. Statistical Survey of Education.

II. Group B, Medium-sized Schools



III. Group C, Large Schools



Physics and Chemistry. The large enrollments in physics and chemistry are readily accounted for by the State Board requirements for high school graduation, and by the demands of the Junior Certificate of the University and the pre-requisite requirements of the colleges and departments within the University. But why is the enrollment in chemistry twice that in physics? Modern advances in physics are quite as great and quite as thrilling as those in chemistry. The modern adolescent is by no means uninterested in current theories and practices in many aspects of physics. Why does he confine his enthusiasm for radio, automobiles, aeroplanes and the like to his extra school activities? Something is out of joint somewhere when such a strong "impulsion" to scientific knowledge is permitted to escape the physics classes. Is it possible that our physics teachers are patterning their philosophy of teaching too much after that of the character in the old play who says: "I content myself with the speculative part of swimming. I care not for the practice. It is not my way. Knowledge is my ultimate end."

General Science and Biology. In this state, general science and biology represent more nearly than do physics and chemistry, the more or less free election of the pupil, since they are very little affected by college and university demands. The enrollment figures in these subjects are therefore illuminating, and seem to indicate that the free choice of the adolescent tends to settle on the more general aspects of science, touching a wide range of phases of his life and environment. If this is true, it puts a heavy responsibility upon the teachers of these general courses to insure that out of them may come those attainments of knowledge which should be expected from high school courses, namely, a scientific attitude of mind, the scientific procedure and specific habits of accuracy, cleanliness, intellectual honesty and the open mind. This, in turn, puts new problems on the overburdened shoulders of the teacher training institutions in the matter of the proper training of teachers for these comprehensive courses.

Physiology. The enrollments in physiology are strong when this subject is offered, which may indicate that the schools are missing an opportunity when they fail to offer among their specialized science courses in the two upper years of high school, an intelligent and dignified course in human physiology, which will capitalize the intense interest of the adolescent at this period in his bodily development. A sane and intelligent course in the structure, operation, dignity and worth of the human body to its possessor and to society, should have definite valuable outcomes.

IV. Sequence of Courses. The situation in regard to sequence of the science courses in the state is summarized in the following table. Data on this point were not available from all the schools in the study, but a sufficiently large number are represented to make the figures fairly representative of the situation.

SEQUENCE OF COURSES

Total cases, possible occurrence of a subject in any year

Year	Physics	Chemistry	Physiology	Botany	Zoology	Biology	Phys. Geog.	Gen. Science
9th	.....	.....	1	5	2	33	3	236
10th	5	5	10	20	5	220	....	64
11th	133	265	38	15	11	70	1	9
12th	276	136	29	7	8	27	....	6

Some of the schools offer a carefully worked out program, with required and recommended subjects leading toward definite goals. Others offer free election, subject only to the State Board requirements, which in the case of science means one year of a "laboratory science" taken in the eleventh or twelfth year. In practice this usually means physics or chemistry, or occasionally biology.

Sequence of the Sciences. The table shows that physics and chemistry are confined to the eleventh and twelfth years, with physics predominantly in the twelfth and chemistry predominantly in the eleventh year. The cases of physics in the eleventh and chemistry in the twelfth year occur chiefly in schools which offer these subjects in alternate years. General science falls chiefly in the ninth year, although there are enough cases in

the tenth year to indicate some uncertainty as to the place of this subject in the curriculum. What contributing evidence is available concerning the junior high school science seems to indicate that the tendency is to move general science back into the seventh and eighth years rather than forward into the tenth. Biology shows the greatest degree of uncertainty as to a definite locus in the four year program. It is predominantly in the tenth year, but occurs with surprising frequency in all the other years. Physiology falls quite generally toward the upper years of the high school course, which is quite different from the situation elsewhere in the country.

Comparison with a recently published study by Hunter[4] concerning the sequence of courses in large high schools throughout the United States indicates that the California sequence is a reflection of the general trend. Briefly, the Hunter study shows general science placed in the ninth grade, biology in the tenth, and physics and chemistry about equally distributed in the eleventh and twelfth years. Physiology falls back into the ninth year. In general, these conditions reflect the recommendations of the N. E. A. Reorganization Committee, published in 1920. It is interesting to see how closely the situation in the California schools parallels the types of work suggested by the N. E. A. committee for the small, medium and large schools.

V. Teaching Assignments in Science. A study of the assignments of high school teachers in the state to science subjects reveals some strange administrative procedures. Anywhere from 4 to 50 per cent of the teaching staff was engaged in teaching one or more science subjects in 1923-24. The distribution in schools of different sizes is as follows:

Schools	Employing teachers	Median No. teachers	Spread-teaching science subjects	Mode
Large	23 to 145	55	From 4% to 18% of staff	12% of staff
Medium	11 to 35	19	From 5% to 24% of staff	10% of staff
Small	3 to 21	9	From 5% to 50% of staff	15% of staff Bi-modal tendency at 25%

Case study of extreme situations in the schools of each group reveals that there is considerable waste and duplication of effort in many school programs in the matter of science assignments. It is fair to say that there are many schools in all three groups which illustrate efficient program organization, but there are unfortunately also schools in all three groups which provide horrible examples of haphazard subject assignments, which are difficult to justify on any grounds. It is a poor administrative procedure which scatters science subjects over a quarter or a third of the faculty if it is possible to concentrate the same work in the hands of half the number, providing efficient working conditions for both teacher and pupil. The difficulties in organization are greatest in the small schools, but in a gratifying number of these, departmentalization has been worked out and rational teaching schedules are provided. Pairs of schools from each group have been selected, showing extreme conditions in teaching assign-

[4]Hunter, G. W. *The Place of Science in the Secondary School,* The School Review, Vol. XXXIII, May and June, 1925.

ments in schools similar to each other in size, number of teachers and in science enrollments.

Small schools	Enrollment	Teachers	Science teachers	% of staff	Science enrollment	Teacher programs
1	162	9	1	11	74	1—Physics, chemistry, general science and one mathematics course.
2	132	9	3	33	77	1—Physics, three mathematics courses. 1—Biology, three modern language courses and English. 1—Chemistry, general science, agriculture and art.
Medium schools	**Enrollment**	**Teachers**	**Science teachers**	**% of staff**	**Science enrollment**	**Teacher programs**
3	388	22	2	9	198	1—Physics and chemistry. 1—Biology and general science.
4	391	20	5	20	169	1—Physics, chemistry, music. 1—General science, domestic science. 1—Chemistry, history. 1—Physiology, zoology, mathematics. 1—Chemistry, general science and radio.

Programs similar to these could be multiplied, but enough has been shown to make it clear that the chair of science in certain schools is likely to prove a settee, and that this situation is by no means inevitable, even in the smaller schools. The large schools, with their large teaching force, are on the whole well organized as regards the assignments to science teaching, but even here one finds the vaudeville program occasionally.

Large schools	Enrollment	Teachers	Science teachers	% of staff	Science enrollment	Teacher programs
5	1117	55	6	10.9	608	1—Biology and general science. 1—Chemistry and general science. 1—Chemistry. 1—Physics. 2—Biology.
6	944	52	6	11.5	558	1—Botany. 1—Physical geography. 1—Physical geography and three mathematics subjects. 1—Chemistry and bookkeeping. 1—Physical geography, botany and two modern languages. 1—Physics, chemistry, physical geography.

In school number 6, physical geography is a required subject with a heavy registration sufficient to keep two trained teachers busy full time but instead it is scattered about the faculty promiscuously. In this, it resembles the fate of general science on most of the school programs. General science very rarely is assigned as a special science subject to a single teacher, but appears on the schedule either where there is a vacant hour, or an unprotesting teacher. Considering how general science looms up in the enrollment figures for the state, it seems reasonable to demand that its assignment be given somewhat more careful consideration.

Of the 804 teachers who were teaching science subjects in 1923-24, 50% were assigned to only science subjects, and 47% to combinations of science subjects and other lines of work. In very few of the small schools was it found possible to assign a teacher to science work only. In the medium sized schools, nearly half of the science teachers taught no other subject. In the large schools, 83% of the science teachers taught nothing else. These teachers handle from one to four science subjects. The most frequent single subject assignment is chemistry. Biology is next, followed by physics; general science falls at the end of the procession.

There is no uniformity in the combination of science subjects taught by one teacher. In view of the fact that there are practically only four science subjects to be provided for in the curriculum, it seems possible that desirable teaching combinations could be worked out by co-operating agencies representing the high schools and the teacher training institutions.

Haphazard Assignment of Subjects. The combinations of science subjects with other subjects which are handled by high school teachers in the state are legion, nor is there any visible explanation for many of the combinations. Teachers are handling from two to ten subjects, frequently of a widely diverse character. The number appearing with greatest frequency is four subjects, followed closely by three and five subjects. There is no uniformity of combinations which could possibly be used as a basis for preparation of these teachers. It is a haphazard medley of unrelated subjects. Part of the blame for this situation may be laid at the doors of the method of certification of the teachers, which permits any teacher holding the secondary credential to teach any subject. Many administrators of high schools are using that kind permission to the fullest extent. It is suggested that a statement on the state credential of the specific preparation of the teacher as to majors and minors, might act as a corrective of this condition.

The study also makes it apparent that the problem facing the teacher training institutions of the state is no longer a problem of preparing teachers of chemistry or physics or biology or botany, but of preparing teachers of science, who can handle ably several phases of science work.

The graphs appearing in this article have been reprinted through the courtesy of the *University High School Journal.*

GIVING HIGH SCHOOL STUDENTS A NEW KIND OF OPPORTUNITY

HOMER MARTIN
Principal, Santa Barbara High School

THE SANTA BARBARA High School students, through a series of half-hour semi-weekly courses, are given chances to touch some of the fields of knowledge otherwise impossible for them to reach in the course of their customary four years of "four solids" each. Teachers voluntarily offer the courses, preferably along the lines of their hobbies. The students are allowed to choose as they please.

In the first semester students are allowed two courses each if they so desire, one group meeting Monday and Wednesday; the other, Tuesday and Thursday. The second semester, because more time is needed for Council, Welfare Committee, Scholarship Society, and clubs, the plan is modified so that one course only is possible for each student.

"Popular" courses are offered during the year in the following subjects: astronomy, art appreciation, ethics, psychology, logic, history of California, popular science, technique of games, music appreciation, community singing, conversational Spanish, conversational French, current topics, office study, use of the library, the slide-rule, and chemistry arithmetic. They prove so satisfactory that there are many expressions of regret that only one course is permitted in the second semester.

Time Arrangements

The time, under the second semester arrangement, is divided as follows: On Monday the principal meets the seniors for a discussion of "Life's Values". At the same time the vice-principal meets the juniors for discussion of "Self-government". The sophomores (who under the junior-senior high school plan are really our freshmen) at this same period are divided into four groups. One group is given instruction in etiquette; the second, in good citizenship; the third, in "how to study"; and the fourth, in the fundamentals of school sports and good sportsmanship. These groups rotate, so that each one receives during the semester instruction in all four subjects. Tuesday and Thursday are used for popular courses. On Wednesday come Welfare and Council meetings, Scholarship Society, and clubs; Friday is kept for Student Body meeting. All students who are not in some special meeting on Wednesday meet in the auditorium for community singing.

Daily Schedule

The program for the entire day is given below:

8:00— 8:45—period 1	10:05—10:45—period 3	1:05— 1:45—period 7
8:45— 9:25—period 2	10:50—11:30—period 4	1:50— 2:30—period 8
9:30—10:00—Special period (Popular Course)	11:35—12:15—period 5	2:35— 3:15—period 9
	12:20— 1:00—period 6	3:20— 4:00—period 10 (Band, Orchestra, Athletics)

Perhaps the best proof of the success of the plan is that both students and teachers are eager to carry on the work for a second year.

EDUCATION TO MEET THE NEEDS OF MODERN LIFE

WILL C. WOOD

Superintendent of Public Instruction, California

BECAUSE of the nature of the school, it is difficult to secure general acceptance for any definite scheme of education to meet the needs of life today. The school has always been, and probably always will be, a conservative and slow-moving institution. Whether a school be a public or private institution, its policies represent a compromise between what the educator believes is the best program of education and what the parents who send their children to school and pay the school bills believe education should be. Progress in education is made, not by bold, revolutionary strokes that shake the school to its foundations, but by experiments undertaken here and there in the system, followed by slow and tedious readjustment of the whole system in the light of the successful experiment.

The American public is slow to admit that education is a matter with which only teachers are concerned. The American parent looks upon the teacher as his agent, charged by the state with the responsibility of teaching and training his children, a function which he himself cannot perform because he has to attend to other business. American parents do not, by sending their children to the public schools, thereby surrender them to the state. They retain the right to pass judgment on the work of the schools and they exercise their right rather freely. They cannot as individuals shape the work of the schools, but collectively, they exert a powerful influence. These parents, acting as a body through the proper agencies of government, have the right to insist that professional educators shall prove the worth of any educational change before making such change universal. They call upon us to prove all things in education and insist that we shall hold fast that which is good. For one, I rejoice that the schools are being checked up by the public.

The Public Twenty Years Behind

The soundness of American education is due very largely to the fact that the public is critical of it. However, this gain for education is matched by a corresponding loss. The public is, as a whole, at least twenty years behind the teaching profession in its conception of educational ideals and processes. The parent of a six-year old child just entering school, looking back over a period of at least twenty years to his own childhood, assumes that his child is going to a school very much like the institution he himself attended two decades before. But when his child comes home with a reader that begins with a fairy tale instead of the traditional patter about the cat and rat, the fond parent begins to have doubts about modern education. When, a little later on, he discovers that Johnny is trying to learn to read by a new-fangled phonetic process beyond father's own

grasp, he begins to talk to his neighbors about "fads and frills" in modern education and praise the good old days when sanity was characteristic of teachers. And when, to cap the climax, he asks Johnny what the letter "s" is, and Johnny hisses like a snake, instead of saying "s" as a normal human being should, father betakes himself to the school board and wants to know why Johnny is being taught the alphabet after the manner of a heathen rather than in the good old orthodox way. The father of Johnny comes upon him two or three years later, reading the daily newspaper—performing a feat unheard of in his own childhood. At first he very naturally attributes the prodigious achievement of his child to the fact that Johnny is his father's son, but when his boasting about it brings the information that all his neighbor's children are doing likewise, he finally capitulates to modern educational advance and the battle is over so far as he is concerned. However, we have a new crop of "Johnny-fathers" every year, and each crop has to be convinced in just the same way. Until the children taught by modern methods grow up and send their own children to school, the modern method is under fire.

For these reasons I say the school is a conservative and slow-moving institution. It is, therefore, difficult for us to outline a program of education that will fit for life today and have that program generally accepted. Much more difficult is it for us to outline a program of education to fit for life tomorrow. The best we can do is to outline a program of education for life today, well knowing that, barring a miracle, it cannot be fully realized for at least twenty years, then work patiently toward its realization, sustained and strengthened in our purpose by the knowledge that Father Time is always working with us.

Objectives Essential in Education

The most essential feature of any program of education is its statement of objectives. In spite of the fact that we live in a material age, it is quite as true today as it was in the time of Plato that everything exists in idea before it exists in reality. The thing that takes shape in the mind is gradually made a reality.

Upon analysis of the history of education in America during the last twenty years we find that the objectives of education are being re-defined and that the school program is being modified in accordance with the modification of objectives. Not many years ago, the objectives of American education might have been stated very simply. Fifty years ago, there was little thought given to the social phases of education. Our American forbears were individualists, and the objectives of their educational system were quite naturally individualistic. The chief aim of schooling, so far as that aim took shape in the mind of the average man, was to enable the individual to get on in the world without having to work as hard as his parents had worked. The school program, therefore, stressed the fundamentals of reading, writing, arithmetic, spelling and language. If some cultural studies could be added to these fundamentals, so much the better, but the culture aim was not a dominant one.

New Aims Developed

During the last fifty years individualistic aims in education have tended to give way to social aims, undoubtedly because of the passing of the frontier, the growth of cities and the movement toward urbanization of American life. The modern school aims to enable the individual to attain success not only as an individual, but also as a citizen, as a member of society. He must be able, after his schooling, to take care of himself, but he must also recognize his duties to his community and to his fellowmen, and he must be willing and able to serve them in certain essential relations. Under the stimulus of the social spirit, the objectives of American education have been greatly broadened.

Today, we retain the traditional objective of command of the fundamental processes, but we have added six other objectives: health, worthy home membership, citizenship, character, vocation and the worthy use of leisure. In attempting to realize these objectives, we are gradually transforming the American school program. The old-time emphasis upon memory and mental gymnastic has given way very largely to emphasis upon activities as educational means. Health cannot be attained merely by memorizing physiological terms and health rules. Character cannot be developed merely by memorizing Scriptural and moral aphorisms and proverbs. One cannot fit himself for a trade or profession merely by cramming facts about his trade or profession. Neither can one learn to use his leisure profitably by conning such phrases as "An idle head is the devil's workshop". Character, health, home membership—all of them depend very largely upon the development of proper habits and habits can be developed only by activities. Recognition of activities as corollary to the objectives I have mentioned, and the making over of the school program to include a great variety of activities, are the most important developments in American education during the last fifty years.

Public Skeptical About School Activities

Having stated the drift of professional opinion during the last three decades, I come back to the part public opinion plays in this development. There is no question in the minds of school administrators about the attitude of the public toward the modern program of education. It is frankly and sincerely critical. The public is skeptical about the new emphasis that is being placed upon activities. The average American citizen will accept the seven objectives I have mentioned without hesitation, but he has not yet reached a point in his reasoning where he will accept the corollary which is the activity program. The school atmosphere to which he was accustomed was very different from the atmosphere of the modern school. He shakes his head when he sees children playing in the yard at all hours of the day. A dramatization of "Little Red Riding Hood" or the story of the fox and the grapes may be all right for a diversion, but he doubts whether a steady program of such activities is really worth while.

"Average Citizen"

When Average Citizen went to school, the atmosphere deemed most desirable for study was a quiet atmosphere—such as that of the reading room in the public library or that of the church during Sunday morning service. In his day, the pupil learned his lessons by memorizing what was in the textbook. Now memorizing requires concentration, which in turn requires absence from noise and other distractions. To secure a proper atmosphere for learning, the old-time teacher kept watch and ward over her school with an eagle eye. Her success in the community was judged very largely by her ability to keep order, which was another word for quietness. Whispering was taboo. Children were allowed to move from their seats only by special permission and then only on tip-toes. The walls were replete with mottoes about silence and order. When a teacher, standing in the rear of the room farthest from the clock, could hear distinctly both its "tick" and its "tock", that teacher knew she had at last arrived.

A New Kind of Order

But today what does the parent find? Instead of a subdued, graveyard atmosphere, the visiting mother finds a workshop atmosphere. The old kind of order has disappeared. In place of the old order, she discovers what the teacher tells her is a new kind of order. However, one mother told me it bore about the same relation to order that cubism does to art, and jazz to music. She found a group of pupils reading in one corner, while another group not far away worked at the sand table with cotton batten and common salt, trying to reproduce Amundsen's adventures in the Arctic. Willie came hopping down the aisle with hands outstretched, careering and buzzing like an aeroplane while Mary followed after him, flapping her wings like a cormorant. They were dramatizing Amundsen's flight, I suppose. That visiting mother, used to the order of the old time school, was almost horrified. She simply can't understand how children can learn anything in such an atmosphere. But she admitted the children were busy, much busier with their tasks than boys and girls were in the quiet atmosphere of old. They were thinking, planning, constructing, dramatizing, yes, actually living the things they were doing. What the mother couldn't understand was that children are learning when they seem to be playing; that play is the business of a child through which he learns to know himself. And was it not Greece's most profound philosopher who declared that "Know thyself" is the highest aim of education?

The schools of former decades were passive; the schools of today are active. Formerly children learned chiefly by rote; today they learn largely by doing. The change from passivity to activity in education has brought much criticism upon the schools and some of the criticism is justified. A program of activities can easily be overdone. However, I am persuaded that on the whole, the activity school is superior to the passivity school. And the activity school is so much more natural, so much more happy. Since the coming of the activity school, fewer children hate school and truancy has been greatly reduced.

Fundamentals Not Neglected in Modern School

A great many parents assume that the so-called fundamentals are neglected in the activity school. Undoubtedly this is quite true in some schools. We have our extremists in education, just as we have them in other lines of work. However, if we check up on the schools as a whole, and compare the results with those of the traditional program of thirty years ago, we find that the activity school is not so neglectful of the fundamentals as some parents have assumed. In reading, for example, we are achieving far better results than did the teachers of the old-time schools. The average child nine years old, trained in the schools of today, reads more fluently and with better expression, than the child twelve years old taught by the methods of thirty years ago. In spite of belief to the contrary, actual tests show that age for age, the children of today write better and spell the commonly used words better, than the children of fifty years ago. We can hardly claim so much for arithmetic, but greater emphasis upon this subject in recent years is bringing better results. The point I wish to make is that our activity program has not detracted from the formal subjects as so many parents have assumed. There is room for improvement in the formal subjects, the old-time fundamentals—much room for improvement, but in order to make such improvement we need not restore the forced, artificial, grave-yard atmosphere of the old-time school. Education can be efficient and at the same time natural. The modern program of education must, therefore, aim at greater efficiency and secure it through the improvement and refinement of natural methods.

Theory of Life vs. Practice

In California we have had some experience in conducting an activity program centered about physical education and the teaching of citizenship. When the war came in 1917, we were assuming, as many others have assumed, that teaching about health, by some mysterious process, brought about better health; that teaching about citizenship tended to guarantee better citizenship. The revelations of the draft shattered the walls of the fool's paradise in which we had been living. We discovered that most men and women know a hundred times more about hygienic living than they apply in actual life; that most men in our penitentiaries know full well the fundamental duties of American citizenship and the nature of our government. They are not in prison because they do not know these things, but because they do not practice what they know about them. And they do not practice them because they were not trained to practice good citizenship. A boy may know the constitution of the United States by heart and may be able to give a splendid eulogy of Alexander Hamilton and the other fathers of the constitution, and yet be a rascal and a traitor. On the health side, every man knows that he should take a bath two or three times a week at least, but the majority of our people do not practice what they know about bathing. They know mouth hygiene, but neglect to use the tooth brush. The upshot of our investi-

gations of problems of health, citizenship and leisure was a conviction that education involving these objectives can succeed only when the program is an activity program. We learn to work by working, we learn to read by reading. However, we do not learn to be strong, virile citizens by reading about it. We do not learn to do our duty as a voter merely by reading about it. We do not learn to control ourselves by conning essays on self-control. We learn to do those things which have to do with character building, body building and spirit building, chiefly by doing these things until we become habituated to them. The whole program of character building and man-building must, therefore, center in activities out of which proper habits will develop. Activities are the chief means that will enable us to overcome the social defects that plague modern civilization. We must, therefore, convince the public that the "activity" program is superior to the "passivity" program which they regard as more or less sacred.

Student Activities Have High Educative Value

The last eight or ten years has witnessed the extension of the activity program in the California schools with a view to improving citizenship, conserving and improving physical vitality, promoting healthful living and enabling the individual to use his leisure time in a worthy way. Student activities of various kinds have been encouraged, not only in the high school, but also in the junior high and the upper years of the elementary school. Student body organizations, class organizations, debating clubs, science clubs, literary societies, hiking, tennis and basketball clubs, are among the organizations that have been encouraged. Greater opportunity for the development of self-direction has been given in order that the young people may learn the fine art of individual and group self-direction if I may use that term in speaking of a group. They learn to plan together, think together and act together. In such organizations they develop social intelligence which is coming to be of greater importance as we are drawn into closer contact with one another in modern civilization. The man of intellectual qualities may know things highly important to the life of human kind. However, the man with social intelligence is the one who makes available for human kind what the man of intellectual type knows, and much more besides. And the socially intelligent man does this largely through his ability to co-operate and get co-operation, which is developed, not by reading books, but by participation in affairs. Such training is essential for the development of character and of those qualities of citizenship which are necessary to change the great body of American citizens from passive, non-participating citizens, into active voters and civic workers intelligently interested in public affairs.

Physical Education a Constructive Social Service

Perhaps the most significant and far-reaching part of the activities program in California is that embraced under the head of physical education. In my judgment, it represents the most constructive social service that our schools have rendered during the last half century. The

emphasis in the California program of physical education is frankly upon the activities side. It is a program of social education as well as a program of physical education. In the high schools, it requires two hours a week; in the grade schools twenty minutes a day. This program was set up about eight years ago and we can now pass at least tentative judgment upon it. I am much more thoroughly convinced than I was at the time I drafted the California physical education law, that the activities program is the best means for realizing the objectives of health, citizenship and worthy use of leisure time. It has raised the physical tone of the pupils, conserved and added to their vitality. It has tended to establish better ideals not only in the field of sportsmanship but in character building. It has rescued us from the dangers of the student-selected and student-paid coach. It has developed higher ideals of recreation and has improved the morals of our schools. The carrying out of our program is still incomplete because we have not been able to get trained teachers who understand the program, in sufficient numbers. We have found that the success of an "activities" program depends very largely upon getting the co-operation of teacher-training institutions. On the whole the hope for any "activities" program is very largely in the young teacher. It is hard to make over a teacher steeped in the spirit of the "passivity" school into a good "activity" teacher. It will take at least ten years more of earnest effort to make our program effective in every district in California. By that time the pupils who get training in physical education during the last few years will be sending children of their own to school and the battle will be completely won. However, the program is now quite safe from attack in the legislature. Attacks have been made from time to time upon the law but they have become steadily weaker and the defense has become stronger. California is definitely and irrevocably committed to a state program of physical education—a program which stresses the activities side and which prides itself on being a part of the general scheme of education.

Standard of Measurement for Physical Education

Three years ago, in addressing a group of physical educators, I told them that the greatest need in physical education is definite data showing the results of physical education. The results of physical education are measurable but so far we have not devised a standard of measurement. I realize that some will question whether a standard can be developed to measure the vitality, the physical tone and the development of children. I know the complicating factors involved in measurement. But I would point out that intelligence which is vastly more complex has a very satisfactory standard of measurement. If we can have a standard of measurement in physical education comparable to that now used in measuring intelligence, administrators can convince the public of the value of physical education much more readily than without such a standard. The advance of physical education, as well as its extension, depends upon the working out of standard tests in activity work.

I have tried to indicate that the modern school program, designed to prepare for modern life, must be an "activities" program, conservatively and sanely conducted, and that physical education is an essential part of that program. We are coming to realize that a child is not mind only; he is also body and soul. And the three phases of life are linked together by mystic ties that cannot be separated.

CAFETERIA LUNCHES

The University High School of Oakland last year appointed a faculty committee in charge of a survey of school environment. One of the situations inquired into was cafeteria lunches. From the report of the committee published in the June number of the *University High School Journal* we glean a bit of information that may suggest to the principals of other high schools that the dietetics of their cafeterias may profitably be investigated.

A summary of the dietary habits of the school population is revealed in the following table:

SURVEY OF LUNCHES PURCHASED BY SCHOOL PUPILS IN CAFETERIA

Pupils	Number	Days	Satisfactory lunches	Unsatisfactory lunches	Questionable lunches
Junior High School Girls	101	3	16	69	16
Junior High School Boys	107	3	21	53	34
Total	209		37	122	50
Senior High School Girls	87	2	13	57	17
Senior High School Boys	83	2	23	43	16
Total	169		36	100	33
School total	378		73	222	83
			19.3	58.8	21.9

Cafeteria food.....Variety satisfactory.

Unsatisfactory due to lack of { Proteins ..... 20; Energy-giving ..... 15; Vitamines ..... 59; Roughage 203

Commenting on the facts revealed in the above summary, the committee says: "Inspection of the table reveals the fact that less than one-fifth of the pupils selected satisfactory lunches. Another fifth purchased lunches that were questionable, and nearly 60 per cent made selections of lunches that were unsatisfactory. By analyzing the content of each pupil's lunch through inspection of data on the tabulation sheet it is evident that roughage and vitamines are the types of food which are most frequently omitted from the lunches of the pupils. The necessity for some education in dietetics is thus clearly indicated. . . . Potatoes and gravy, hamburg, roast beef, and pie, are too frequently chosen, while milk, fruits, and vegetables are usually omitted."

HOW THE PRINCIPAL AND TEACHER MAY ASSIST IN INTERPRETING THE HIGH SCHOOL TO THE PUBLIC

MRS. SUSAN MILLER DORSEY
Superintendent of Schools, Los Angeles

WHILE the purposes and possibilities of the public school have been more generally set forth and better understood in the last ten years than ever before, there is constant need to demonstrate why all children should be educated and why all adults should be taxed for that education. Many people, especially childless men and women and the socially selfish, are still challenging the right of the state to tax them for that from which they claim to receive no benefit. Only through the right interpretation of public education can these objectors be made to see that they need the service of the schools quite as much as the schools need their support.

Economic Objectors Must Be Answered. It is the excessive individualism of Americans, especially of some self-centered business and social groups, that prevents a realization of the full meaning and value of public education. Absorbed in the tense struggle for supremacy in the business, social and political world, there is an economic caste that is alarmed at seeing the schools extend their bounds yet more and more through taxation and that periodically arouses itself to resist such encroachments. Their claim is that not all children are worth educating; that only those who *desire* training and who will profit largely in an intellectual way by the service of the schools should be educated at public expense. There is but one answer to such a claim; if society is to be safe in a land of such freedom as ours, an unusual effort must be made to lessen through special training the handicap of those children who suffer under an unfortunate heritage of any kind. The public school is the great equalizer of opportunity for the handicapped children. It is more than that; it is the great unifier of the thoughts and purposes of the young. It makes the alien-minded, whether foreign born or native, American in sympathy, understanding and ideals.

Principals and Teachers Responsible. It is the peculiar responsibility of principals and teachers constantly to interpret the function of public education. In no surer way can there be established in the minds of the people a conviction of the necessity of the American public school and the peril of any abatement of its activities. Such interpretation should aim to do more than establish in a general way the value of public education. It should secure to the citizens a very *specific understanding* of what the schools, and especially the high schools, (because of their greater cost) are actually doing. *Hostile* objectors are not so numerous and may be endured, but an immobile, indifferent, unsensing public is an intolerable incubus under which no public institution, and certainly not

the schools, can hope to prosper. Every plan and undertaking, every proposed expenditure, should be matter of common knowledge and, what is more important, matter of perfect understanding, in order to secure the sympathetic co-operation of the public, or make sure that objections are reasonable. An attitude on the part of school people that theirs is the business of managing the schools; that it is hopeless to expect people in general to comprehend the aims and proposed outcomes of education, is a trifle presumptuous, for a part of the business of educators is to make what they are doing comprehensible to all whose support is needed for the enterprise.

Evaluating the Curriculum. Many times the public expects too much of the schools. They quite forget the days of their own untrained youth; many times they expect the wrong sort of thing. To illustrate very specifically: There was a period when, in the teaching of spelling, results were evaluated in terms of the number of unusual and difficult words the student could spell, most of which he would never have occasion to use. The schools have ceased to perpetuate this folly; there is too much to be done along too many lines; spelling must serve real needs. Consequently, students are drilled in the spelling of the common and necessary words and are taught to develop the dictionary habit and an attitude of aversion to mis-spelled words. With such training, it is expected that the student will be able to make his way successfully through the orthographical mazes of life. This single illustration points to a general fact too little understood by a non-reflecting public, viz., that the schools cannot be expected to turn out a finished product, factory fashion; that education is not a product at all, but a lifelong process and that the principal part to be undertaken by the schools is that of guiding and hurrying up the process when guidance is most necessary and when the restless, boundless energy of youth makes the hurrying up process most possible. The people must be set right and helped to see what the schools can and should accomplish in the training of the young.

Values in Extra-Curricular Activities. Again, the public is often in doubt as to the value of so many extra-curricular activities. A generation that plodded through school with no enlivenment of academic work more inspiriting than an occasional exhibition or picnic is confused at the complex organization of modern high school activities and highly doubtful of its educative value. Such a generation is entitled to the fullest explanation. Once let it be clearly set forth that the young people in the high school of today are to pass into their life activities under conditions of unbelievable and almost unendurable strain and complexity, and the people will understand that training in activities is as necessary as cultural learning, a training in action, management and adjustment that will result in ready adaptability to a variety of experiences wholly unknown to former generations. Interpretation is necessary to make clear the functioning of student government, cafeteria management, safety committees and the work of the various groups engaged in journalistic, debating,

oratorical, dramatic, literary and other school activities outside the required classroom work.

Interpretation of Cultural Achievements. While the exposition of the aims and possibilities of education to adult audiences is essential to the understanding of modern high school education, with its complex activities and varied curricula, it still remains that a demonstration of its actual achievements through the work of the students is the most convincing form of interpretation. For instance, a critical public may object to expenditures for so-called non-essentials—music, art and physical culture. Another portion of the public, with another critical slant, may claim that the public schools are deficient in provisions for cultural and artistic training. But evidence in the way of accomplishment is convincing and a series of well-prepared and well-timed demonstrations of what the schools are doing in musical, artistic and physical culture lines should convince the first objectors that such training is worth while and should reveal such cultural achievements as will confound the second critic. Not only is it the business of the schools to train the young for the practical and academic necessities of life, but also it is important for the young people themselves and for the future of a community that hopes to woo the arts to train all students in the understanding and, especially, in the appreciation of the beautiful in sound, color and form. Any community that is ambitious to excel in the arts can most thoroughly accomplish its purpose through the right sort of training in the public schools. Let the public know what is being done and why this is being done; let it be shown that the work in these cultural subjects is designed not only to enrich the lives of the students, but also to provide appreciative listeners and patrons and enhance the cultural possibilities of the entire community. In the face of fine performance, even the most obtuse economist must relax his prejudice against expenditures and the most doubtful critic of the cultural achievements of the high school must concede excellence.

Educative Value of Art in School Plays. A small minority object to school plays. They have a right to do so if the plays are nothing—shallow, crude, coarse and unworthily presented. Objections will disappear when worthy drama is chosen and presented in artistic fashion, especially if care is taken to explain to the public the educative value of such an activity. If, however, neither principal nor teacher looks upon such presentation as anything other than a fleeting show, if the educative value is not apparent in the worth of the thing presented and the training gained therefrom, it were better to attempt no justification of the performance: if, however, there is real training in self-expression, in responsive support of each to every other, in the subordination of all to the requirements of the climax, then there must be value in the experience, for is not this life itself in any community where life is lived worthily?

I remember on one occasion to have witnessed in a high school a bit of coarse vaudeville inserted into an otherwise dignified and appropriate

program on the occasion of the opening of a new auditorium. The teacher in charge of that particular contribution had failed entirely to grasp the significance of the occasion, as well as the spirit and ideals of that school. She was, in fact, a totally unfit person to be entrusted with the interpretation of any type of public education.

On the other hand, I recently attended the first commencement of a new trade school and was interested in the unique and ingenious character of the exercises, utterly at variance with the conventional type of commencement and most admirably designed to set forth the character of the work being done and the excellence of its accomplishment. After a brief exposition in turn of each activity, of the standards and excellencies to be looked for, the graduates passed in review with exhibits of their work in the form of completed articles, or gave demonstrations of necessary processes. I recommend the suggestion as one that might lend variety to many a commencement in other than trade schools and, what is more to the point, might greatly aid in interpreting the work, aims and spirit of public education. The set literary programs on commencement occasions are usually most excellent. They might, however, be varied with advantage. I recall once to have seen a student on a commencement occasion give a demonstration of wireless telegraphy with laboratory instruments. This was in the days when wireless telegraphy was a novelty. It was not the least interesting number on the program.

Politicians and Faddists Alike Dangerous. It should never be forgotten that high schools are supported by the state. No occasion should, therefore be lost to impress citizens, not only with the variety and serious character of instruction, but also with its adaptability to the making of good citizens and patriotic Americans. Teachers and principals have no place in public schools of America who are casting longing glances to some other form of government and are giving only half-hearted support to their own. The world is wide and every form of school exists within the ample domains even of our own land; the *public* school is *our country's very own,* not to be manipulated by politicians, by faddists, by visionary experimentalists, but to be consecrated to the training of good citizens. Teachers and principals who accept work in the American public schools are rightly expected to believe in the great principles for which the nation stands, to teach those principles, and then to interpret the teaching for the better understanding of a public that is itself often dull of comprehension or indifferent to our great American ideals.

Special Programs Are Good Investment of Time. The observance of special occasions, such as the centenaries of great men and great events, with the patrons of the schools as guests, affords an excellent opportunity to reveal to parents the character of the school instruction along patriotic lines. Incidentally, also, such occasions afford opportunities to re-animate the enthusiasms of the adult for those same ideals; in passing, it may be said that the attempt to interpret the schools to the people is one form of adult education that should be undertaken systematically and seriously

for the benefit of the adult as well as the schools, since the standards and aspirations of education are in advance of those of the general public.

Some principals and teachers are prone to regard such occasions as those described above as interferences with the regular program. In these days of vast expenditures for public education, it will be found, however, that the use of every opportunity to reveal to the people the high aims and real accomplishments of education and to enlist their sympathy in those aims is a good investment of time and effort and will ultimately benefit the schools.

Uses of Visiting Day. Still another way of interpreting the schools to the public, one that has been often resorted to in recent years in the observance of American Education Week, is the visiting day. Merely to show the routine of school work in classes of varied types is not interpreting the schools; it is exhibiting them. On such days, an added feature will be found to increase greatly for the adult visitor the significance and value of the experience. Brief talks by persons (principal, teacher, head of department) competent to set forth to assemblies of visitors the nature and object of the several types of instruction will prove to be interpretive. It may be questioned whether it is really profitable on such days to exhibit the entire school program. A better plan would seem to be to select certain subjects and activities, as, for instance, the English work, or the science work, and the art work, in one year and in another year to choose the social sciences and the shop activities. Before opening the classes to visitors, there should be an explanation to the assembled groups of what the school aims to accomplish in these particular lines and how it proceeds toward those ends. The lessons of the day in the respective classes should illustrate the general explanation and interpretation given to the visitors. Such a plan necessitates, of course, a purposed co-operation between the assembly lecturers and the classroom teachers. It may be found that the procedure here outlined will result in greatly clarifying the understanding of the school work for principal and teachers, as well as for guests.

How desirable a thing it is for the public to glimpse now and again the very heart of the school, to contact the youthful enthusiasms, the altruistic longings of these young people soon to be the knight errants of a better civilization! How important that the public shall know that the schools have high standards of learning, character and conduct, which are to be respected so that the graduates of the public schools shall not fare forth into a world where their enthusiasms will be chilled and where low standards of honor and honesty, a dearth of ideals and an absence of altruism will blight the noble ambitions of aspiring youth!

EQUAL OPPORTUNITY VS. SAME OPPORTUNITY

A. C. OLNEY
Commissioner of Secondary Schools, California

WE HAVE all said that our objective in American education is an equal opportunity for all instead of the ancient objective, now happily being discarded, of little opportunity for the less gifted and great opportunity for the most gifted. One of our ablest critics, Albert Wiggam, in his brilliant book, *The New Decalogue of Science* says that we are, in our traditional school system, "providing not an equal opportunity for all, but the same opportunity for all." Evidently there is some truth in the charge. Thomas H. Briggs, of Columbia, has phrased the objective of modern education clearly and unmistakably: "To teach pupils to do better the desirable things that they will do anyway and to teach these by means in themselves worth while and to reveal higher activities, and to make these both desired and to an extent possible."

To each, according to his ability and capacity, should be given the opportunity to advance. Indeed, not the same opportunity, but equal opportunity should be accorded to all.

Expansion of Secondary Schools

In 1890, in the United States, our high school enrollment was 203,000. In 1922, it was 2,873,000.

Thirty-five years ago, the same chance was offered in our secondary schools to a carefully selected group. Since that time our population has grown 70%; the enrollment in our elementary and kindergarten schools has increased 72%; our private high schools, 137%; but our public high school enrollment has increased 1310%.

In California in 1920, we enrolled in our public high schools more than one-tenth of the entire public high school population of the nation; hence California's problem has been more than usually great.

It was a veritable invasion of an ancient institution by a great army which suddenly rose and swept down upon it. The invasion of Rome by the barbarians was small in comparison. The traditional high school was prepared to train intellectual aristocrats for the particular vocations called the professions. Then came the deluge—the great bulk of our youth representing every grade of ability, and every variation of interest and capacity. The only weapons which the high school had to use in its own defense were the traditional college preparatory courses. The educational slaughter was frightful. Over two-thirds of the attacking force of ninth graders were compelled to leave before the end of the regular course of four years. This calamity has continued up to the present time.

Complexity of Secondary Problems

The non-academic invader, the one who never intends to pursue his education further on account of limitations, is offered the choice of manual arts or of a business training.

The future laborer, mechanic, farmer, business man, manufacturer, distributor and professional man, are grouped together in our high schools. Except in the largest institutions, the courses offered to this widely varying group are academic, commercial and wood-shop. The usual custom seems to be to try them out on the academic work; if this proves distasteful or uninteresting or too difficult, one of the other lines is suggested. The fundamental assumption that only the weaker should be permitted to take manual arts or commercial work is unfair to the future of these lines of endeavor. It is unfair to the individual student because it limits the work suggested to too few lines.

Only a few years ago, students unable to carry the hard work of an academic program left school, and entered a trade, business, industrial or other calling, as an apprentice.

The high school of today, as a result, should be training its youth to go into the fields of practically every useful vocation. The high school principal knows this well. The parents of his pupils do not. While the high school is evolving with the speed of the aeroplane, those who are not thinking a great deal about the matter are rolling along with the speed of the good old "one-hoss shay". There is, therefore, added to the manifold duties of the high school another most important one, viz., that of educating the general population in what is going on all about them.

One very important fact connected with this lack of knowledge on the part of the adult population is its failure to understand that a revolution has taken place and is taking place in the character of education. Too many are thinking in the language of their own high school days about their children's training. The result is that too many high school students are being trained for the professions and not enough in other occupations.

This fact alone would justify the setting-up in the high schools of a system of guidance—educational and vocational.

New Social Problems

The situation, however, is further complicated in several ways. With the enormous increase of school enrollment, many social groups never before seen in secondary schools have made their appearance. Also many boys and girls are entering high school who are not graduates of the elementary school, but who have been promoted because of physical age and of supposed ability.

We are now going through the throes of readjustment to the new situations. New social problems are presented daily. The social situation inside the school is further complicated by the fact that the character of the adult population is rapidly changing, socially and vocationally. There is need of wise social guidance for our school population, therefore, for several reasons.

Junior High School a Buffer State

Methods and subject-matter of elementary and secondary schools are radically different. In the past there was no graduation from one into the other. The dive from the warm element of the maternalistic elementary system into the cold water of the traditionalistic secondary system was too great. Even where the spirit of teachers was willing, the laws were weak and forbade any gradation from one to the other.

Thus arose the modern junior high school, invented to act as a buffer state between the hostile elements of traditional elementary and traditional high school systems. Some primitive and savage spirits sought by the use of tomahawk and paint to secure a change from the elementary to the junior high school system. They hewed seventh and eighth grade sections from the elementary and the ninth grade from the secondary system, placed them in a building together, painted out the old name over the door and with bright fresh paint printed "Junior High" above the portal, and waited in vain for a magic change. Some are still waiting.

A Change of Spirit Needed

But this change cometh not with waiting but with a change of spirit. There must be a melting of the maternalism of the seventh and eighth grades and a softening of the traditionalism and rigidity of the ninth grade, before the three years which care for the adolescent youth after they have ceased to be children and before they have entered upon maturity can become a real unit in our educational system.

The error of the supposed necessity of two years of theoretical review should give way to putting into practical use in shop and laboratory the tools of language and mathematics taught in the first six grades. Exploration in many fields should mark the period of the junior high. It should constitute a gradual introduction to what is to come after, in the senior high school. The change is coming rapidly. From 30% to 40% of all pupils of seventh, eighth and ninth grades are now enrolled in California schools calling themselves junior high schools. They constitute an army of 30,000 youths.

One important feature of this new type of organization is the attempt to form groups of youths more or less homogeneous in capacity and ability. For a time, the intelligence test was looked upon as the chief tool for helping us to form these groups. Intelligence, however, important as it may be, is not the most important human trait, nor indeed the most desirable. It is almost certainly the one characteristic least subject to change by the individual. A host of other characteristics are subject to change by individual effort. Among these are industry, attention, cheerfulness, perseverance, truthfulness, honor, honesty. Who shall say that the development of these is not even more important than the acquisition of certain fundamental subject-matter facts and processes?

Importance of Extra-Curricular Activities

If this be true, then many extra-curricular activities are more important than the teaching of actual subject-matter in the classroom.

In these young people of adolescent age, there is much that resembles the restless sea. Instance the sudden change from calm to storm; from storm to sunshine and tumultuous gaiety and then down into the depths of black despair. In this period of dawning youth there is much that is undiscovered, but this much we have all observed: even in their special interests, enthusiasms burn themselves out quickly; one enthusiasm succeeds another in astonishing array.

This characteristic has seldom if ever been capitalized in education. We older radicals have become mild conservatives. We all, more or less, have been sprinkled with the water of forgetfulness. We forget the days of our youth. We unconsciously expect these boys and girls to behave as men and women.

When they do so behave, somebody or something has robbed them of some glorious quality of youth. One of these qualities we call inconsistency. If a youth who is enacting a role this month, passes into a character who is enacting another role next month, it is beyond us. But it is a great law of life.

Let us seize it and use it. With this sudden change of enthusiasm usually come accesses of energy, brief but powerful. There is a need to do something, to create something useful.

Opportunities of the School

Here, it seems to me, is the explanation, the opportunity to teach objectively in the laboratory and the shop those home activities that the steady march of our population from country to city has caused us to omit from the teaching of our youth. They will need this knowledge when they come into homes of their own. Their enthusiasm is active in learning the use of tools and their application to wood, sheet-metal, plumbing, glass, concrete and all the rest. As one enthusiasm rather quickly passes, it would be simple and easy to pass from one short unit to another.

The activities of boy scouts, girl scouts and camp fire girl organizations play a most important part in the development of character in the adolescent period of the junior high school.

After this period comes that of the senior high school. During this era, there seems to be now in existence no one type of organization with a universal appeal. After graduation from high school, however, many social organizations breathing high ideals and unselfish activity for others are open to young men and women. The service clubs offer a rich field in this direction. The great need of the present day, therefore, seems to be for the organization in the senior high school period of groups which will fill this character-development need.

Co-operation of Service Clubs

In the adult service clubs there usually exists representation from many vocations. Custom usually allows only one or two in each club from each business, trade or profession. In the senior high school the selection of one's future vocation receives much thought and attention. Boys and girls in ever-increasing numbers are making their choices here. In the Sacra-

mento high school a small group of boys who had made their selections of future occupations recently banded themselves together. They intend to admit to membership only the leaders of the school and not more than two who have chosen each particular calling. Their objectives are idealistic. Their watchword is "Service" to their school, their city, and their country.

The little club is sponsored by one of the men's service clubs of the city. There is no tangible connection between the boys' organization and that of the men. The men who are lawyers have interested themselves in the boys who intend to become lawyers. So with the representatives of every other line of work with their boy understudies.

There is a great deal of enthusiasm among both men and boys. Other organizations of men are already talking of encouraging similar organizations of boys. It may be that the germ is here of an idea to promote in the high schools a type of organization which will give vocational and social guidance, and one which will be mutually beneficial.

Responsibility for Educational Leadership

Into the hands of the secondary school society has placed the training of our youth. The junior high school is making more gradual the abrupt change from elementary to high school. Its holding power is highly superior to that of the traditional school. It already enrolls 40% of the seventh, eighth and ninth grades. Within a few years it will enroll 90%. The growth of this new type of school has already had a profound effect on the curricula of both the elementary school and senior high school. The work of the elementary school is being confined to a smaller number of subjects—the fundamentals—while the senior high school is preparing to offer a wider field of elective work to those who have had three years of exploration in many activities.

Within the memory of some of us the high school felt the cramping effect of university domination. Outside the larger cities, it is still felt in the traditions that were established. There are some indications that a few senior high schools have attempted to assume a similar attitude of domination toward the junior high school. Don't allow a repetition of this ancient course! Our institutions must be free to develop according to the demands of society.

The universities in California have adopted a liberal policy of admission. Our junior colleges admit any high school graduate. Our high schools may now admit capable youths before they finish the eighth grade. Our junior high schools may admit capable pupils before they finish the sixth grade and may advance them as rapidly as they are capable of progressing. Restrictions are being cut. Opportunity is being made equal to all. For every child, we must see to it that

> "For every day I stand outside your door
> And bid you wake and rise to fight and win."

is as true in everyday prose as in the poet's dream.

THE PRESENT STATUS OF CALIFORNIA PUBLIC JUNIOR COLLEGES

WILLIAM F. EWING
Principal of the Pasadena High School and Junior College
President of the California High School Principals' Association

IN 1907 the State legislature passed an act enabling high school districts to add two years to the traditional four-year course. Fresno (1910) was the first public high school in the state to adopt this plan of organization. In 1913 the Fullerton High School established junior college courses. The Kern County Junior College came into existence the same year. By the Fall of 1917 at least eight California public high schools had established courses beyond the four-year high school.

Early in 1917 the State legislature passed an act making the junior college an integral part of the high school, and provided for its maintenance, the same state and county aid as for the high school of which it is a part. The law of 1917 wisely provides that a High School Board in any district having an assessed valuation of $3,000,000 or more, can, by resolution of the Board, establish post-graduate or junior college courses in their schools.

Features of the Law of 1921

In 1921 the State legislature passed another junior college act which does not repeal the law of 1917 but provides new features, viz., state aid of $100 per year for each junior college student in average daily attendance, $2,000 annually for the junior college district, and tuition for non-resident students. It also provides for affiliation with the University of California.

The law of 1921 requires that the high school district wishing to establish a junior college must meet the following requirements:—

1. An average daily attendance of at least 400 high school students.
2. A tax valuation of $10,000,000 or more.
3. An average daily attendance of more than 75 junior college students.

Obviously it is financially desirable for a community to organize its junior college under the act of 1921. The following colleges seem to be operating under that act:

1. Fullerton
2. Modesto
3. Ontario (Chaffey)
4. Pasadena City
5. Riverside
6. Sacramento
7. San Mateo
8. Junior Colleges at State Teachers' Colleges

The following communities have been contemplating the establishment of junior colleges:

1. San Bernardino
2. Yuba City, Sutter Co.
3. Burbank.
4. Marysville
5. Siskiyou County
6. Yreka

Three Groups of Junior Colleges

California junior colleges may be divided into three main groups:

I. Junior colleges in connection with Teachers' Colleges.

1. Arcata
2. Chico
3. Fresno
4. San Diego
5. San Jose
6. Santa Barbara

II. Junior colleges in connection with public high schools.

1. Azusa, Citrus Union
2. Bakersfield, Kern Co. Union
3. Brawley Union
4. El Centro, Central Union
5. Eureka
6. Fullerton
7. Hollister, San Benito Co.
8. Ontario (Chaffey)
9. Pasadena City.
10. Pomona City
11. San Mateo
12. Santa Ana
13. Santa Maria
14. Santa Rosa
15. Taft

III. Junior colleges housed in buildings apart from the high school plant and organized as distinctly collegiate institutions.

1. Modesto
2. Riverside
3. Sacramento

Trend of Educational Re-organization

The trend of educational reorganization seems to be on the 6-4-4 plan, i.e., six years of elementary instruction, four years junior high school (grades 7-8-9-10), four years junior college (grades 11-12-13-14).

Mr. George A. Merrill, Director of the Wilmerding School of Industrial Arts, San Francisco, reported[1] "During the past half-year the Board of Education of San Francisco has adopted a building program which includes provision for a number of intermediate schools (commonly called junior high schools) that will accommodate the seventh, eighth, ninth and tenth grades. Although it will be several years before all the tenth grade pupils will be housed in the junior high schools, it seems certain that the ultimate outcome in California will be a system to include grades eleven to fourteen and obliteration of the old-time high school. In other words, the present so-called senior high school (as distinguished from the new junior high school) will be bisected, its two upper grades becoming a part of the new junior college.

"Heretofore the Wilmerding School has admitted boys who have completed the eighth grade; in other words, upon graduation from the grammar school. If we are to continue to articulate with the San Francisco public schools, as I think we should, we must plan to discard our two lower grades, probably as early as August 1926, and require for admission completion of the tenth grade, or the period of compulsory schooling (age sixteen)."

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[1]Annual report of the President of Univ. of Calif. Dec., 1924, p. 222.

President Goodnow of Johns Hopkins University has recently announced[2] that he has decided to recommend the discontinuance of freshman and sophomore classes.

Junior College Enrollment

According to the October 1924 report from Commissioner Olney's office, there were 38 public high schools in California, each one of which had a day enrollment of 1000 or more students. The total enrollment of these schools was 70,051. Assuming that not more than 10% of the students enrolled in them will attend college, it would mean that there would be 7000 freshmen from the large high schools.

A recent survey of California public junior colleges shows that they are touching a very small number of college students. In October 1923, less than 1400 freshmen were enrolled in the public junior colleges. During the same period there were at Berkeley 2221 freshmen, and at Southern Branch 1239, a total of 3460. Last October, all junior colleges reported about 1800 first-year students. Up to now, not one of the junior colleges has reported more than 500 freshmen.

Assessed Valuation and Cost

The total area of the junior college districts (approximately 7000 sq. mi.), compared to the area of California (155,652 sq. mi.), is insignificant (1:21).

The total assessed valuation of the junior college districts is considerable (approximately $600,000,000), but in comparison with the wealth of the State ($5,716,358,058), it is small (1:9).

The amount of money set up in the junior college budgets 1924-25, varies from $8,000 to $98,000. The total for all junior colleges is probably less than $500,000.

Junior college costs are moderate. The average seems to be about $300 per year per student.

Professional Attainments

Junior college officials are convinced that the introduction of junior college courses into the secondary school program has stimulated professional growth of many high school teachers.

In the chart given it may be observed that of all teachers giving instruction to junior college students, 67 have no academic degrees (usually teachers of vocational subjects, music, art, or physical education); 94 have A. B. only; 149 the M. A. or M. S. degree, and 82 have done graduate work beyond the Master's degree. The minimum requirement of university training for the junior college teacher of the future will probably be a Master's degree or its equivalent.

The growth of high school enrollment in California during the past twenty-five years has been tremendous. Our public secondary schools are rated among the best in the nation. The next big movement in the field of secondary education will be the development and growth of public junior colleges.

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[2]See New Republic, March 25, 1925.

Chart Showing STATUS OF CALIFORNIA JUNIOR COLLEGES—MARCH 1925

LOCATION and NAME of COLLEGE	YEAR ORGANIZED	AREA OF DISTRICT IN SQUARE MILES	ASSESSED VALUE OF DISTRICT 1924-1925	JUNIOR COLLEGE BUDGET 1924-1925	ENROLLMENT OCTOBER 1923	ENROLLMENT OCTOBER 1924	No. REGULAR STUDENTS 1st. Yr. 1st Sem. 1923-24	No. REGULAR STUDENTS 1st. Yr. 1st. Sem. 1924-25	ANNUAL COST PER STUDENT 1923-24	ANNUAL COST PER STUDENT 1924-25 (estimated)	No. Diplomas Granted 1923-24	ESTIMATED NO. DIPLOMAS TO BE GRANTED 1924-25	No. JC CERTIFICATES 1923-24	No. JC Certificates to be Granted 1924-25	COURSES OFFERED 1. Diploma 2. Certificate; 3. Vocational.	AFFILIATED WITH UNIVERSITY OF CALIFORNIA	ANNUAL STUDENT BODY DUES	TRAINING of TEACHERS			
																		No Degrees	A B Only	M A or M S	Graduate work beyond Master's Degree
Azusa—Citrus Union	1915	30	6,800,000	8,000	21	—	22	24	200	200	3	0	—	—	1	NO	—	1	2	3	2
Brawley Union	1924	293	10,000,000	8,000	—	—	—	5	—	2000	—	—	—	—	1	NO	—	1	1	5	2
Bakersfield-Kern Co. Union	1913	2400	72,000,000	—	111	126	87	99	—	—	9	9	9	9	1,2	NO	—	1	12	8	4
El Centro—Central Union	1922	128	10,855,933	—	47	57	35	40	300	265	10	8	—	—		NO	12.00	20	11	7	5
Eureka	1914	100	13,000,000	—	18	17	20	20	—	—	0	0	0	0	1	NO	—	0	[illegible]	2	—
Fullerton	1913	160	44,000,000	60,040	140	146	74	106	300	300	30	22	—	—	2,3	YES	7.00	8	4	12	3
Hollister—San Bonito Co.	1919	1400	13,211,000	—	—	—	117	130	170	170	9	9	22	25	1,2	NO	—	0	2	2	3
Modesto	1921	133	18,758,930	98,831	214	—	127	140	252	250	47	56	—	—	1 3	NO	7.50	3	6	10	7
Ontario—Chaffey	1916	250	15,000,000	86,000	200	208	150	145	448	500	40	30	—	—	1 3	YES	3.50	4	7	10	10
Pasadena City	1924	127	118,688,615	60,750	0	240	0	219	—	300	0	0	0	0	1,2,3	YES	2.50	4	0	29	14
Pomona City	1915	36	14,000,000	—	—	75	63	69	—	—	0	0	0	0	1,2,3	NO	2.00	0	2	8	5
Riverside	1916	217	17,553,800	74,395	183	254	53	95	188	245	35	36	10	12	1,2,3	NO	5.00	9	9	7	5
Sacramento	1921	20	100,000,000	72,000	175	677	326	400	300	300	40	65	—	—	1	NO	5.00	5	7	11	11
San Mateo Union	1922	40	18,000,000	—	100	—	71	85	—	—	8	14	—	—	1 3	NO	10.00	4	8	14	5
Santa Ana	1915	60	25,269,095	66,570	230	210	152	134	245	245	5	7	30	26	1,2,3	YES	7.50	3	10	7	2
Santa Maria	1920	1000	15,706,135	—	31	41	30	35	263	263	0	0	0	7	1,2	NO	None	1	1	4	4
Santa Rosa	1918	—	12,234,360	—	84	120	53	84	—	—	0	0	15	25	2,3	NO	5.00	3	7	4	2
Taft Union	1922	500	67,000,000	—	14	22	13	19	—	—	0	2	0	2	1,2,3	NO	—	0	1	6	0
TOTALS		6884	592,077,868				1393	1807			236	258	86	106				67	94	149	82

Note:—A blank (—) indicates information not obtained.

THE HIGH SCHOOL'S INTEREST IN METHODS OF SELECTING STUDENTS FOR COLLEGE ADMISSION*

DR. WM. M. PROCTOR
Professor of Education, Stanford University

IN 1913 there were 11,500 secondary schools, and 1,218,804 secondary school pupils in the United States. In that year also there were 216,493 students attending colleges and universities, or 173 college students for every 1,000 secondary school pupils. In 1925 there were 15,000 secondary schools and 2,873,000 secondary school pupils. College students for 1924-25 number about 650,000, or about 230 college students for every 1,000 secondary school pupils. In the twelve years since 1913 there has been an increase in secondary school pupils of 212 per cent; the increase of college students during the same period of time has been 305 per cent.

Colleges Try to Check Increase. This unprecedented increase in the number of students attending American colleges and universities has not been to those institutions an unmixed blessing. For one thing it has brought them a much larger percentage of students poorly prepared both academically and mentally to do college work. The colleges have been adopting protective measures to cope with this situation. Tuition fees have been increased. The number of new students under junior standing have been limited. Total enrollment, in many cases, has also been definitely fixed. Entrance requirements and scholastic standards have been readjusted on a higher level.

Protective Measures Not Successful. The statistics above cited seem to indicate that these protective measures have failed to affect materially the number of students seeking and gaining admission to our colleges. The youth of America seem to be college bent, and the measures taken to discourage or frighten them away appear thus far to have operated as a stimulus rather than a deterrent. This is illustrated by the situation at Stanford University. In 1918-19, when Stanford raised its tuition from practically nothing to about $300 per year, there were some 1,600 students on the campus. In spite of the present limitation of men students under junior standing to 550 new admissions per year, and the restriction of women students to a total of 500, registration in all departments of the university for 1924-25 will be between 3,500 and 3,700 students. Similarly the University of California has found increased incidental fees, tuition in a substantial amount for out-of-state students, and a semi-annual "slaughter of the innocents" in the semester examinations, an insufficient protecting dike for keeping out the annual flood of students who present themselves for admission.

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*Address delivered before the California High School Principals' Convention, Santa Barbara, 1925.

Present Methods of Selecting College Students

The College Entrance Examination Board. This method of selecting candidates for admission to college grew out of the fact that prior to 1900 standards of accomplishment in secondary schools were chaotic. The entrance examination was devised to meet this situation, but the individual colleges found the task of giving and scoring such examinations a great burden. In the year 1900 the College Entrance Examination Board was established to serve primarily the New England group of colleges. In 1915 there were fewer than five thousand candidates for college admission who took the C. E. E. B. examinations. The annual report for 1924[1] shows that there were 19,362 candidates, representing 913 public schools and 742 private schools, and seeking admission to 173 institutions, who were examined by this board. The service rendered by the board has increased four-fold during the past ten years.

Comprehensive Examinations. In 1915 candidates were allowed the option of taking the old plan examination of the board, which covered approximately fifteen units of secondary work, or the new plan, known as the comprehensive examinations. The new plan calls for examinations in at least four fields—three units in each of two fields, and at least one unit in each of two other fields, or a minimum of eight units—and was supposed to permit of greater flexibility. It permitted secondary schools to exercise larger freedom in methods of teaching, and was supposed "to test the power of the candidate rather than specific and detailed accomplishments in certain subjects."[2]

The New Plan Fails in Its Appeal. In spite, however, of the promise of the new plan it does not seem to appeal to those who are training, or coaching, young people for the C. E. E. B. examinations. This is shown by the fact that in spite of the greatly increased number of candidates taking the examinations, as per 1924 report above cited, the number electing to take the comprehensive, or new plan, examinations, decreased by 220 candidates. The secondary schools concerned appear to prefer to coach for "specific and detailed accomplishments", rather than to accept the opportunity offered by the board to become more independent in their teaching methods and to train for power and comprehension.

Weaknesses of the Entrance Examination Method. Among the weaknesses of the examination method of college admission may be mentioned the following:

A. No single examination of the essay type, such as those given by the C. E. E. B., gives a fair sampling of the candidate's knowledge in a given field. Mastery of a subject can only be measured approximately, even when a number of samplings which cover the subject from different angles have been taken.

B. The personal equation of the marker introduces a serious element

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[1]Walters, Raymond. *The 1924 Annual Meeting of the College Entrance Examination Board, School and Society,* Vol. XX, No. 517 (1924), pp. 667-9.

[2]Inglis, A. *The Principles of Secondary Education.* Houghton, Mifflin Co., Boston, 1918, p. 325.

of error into the scoring of all essay type examinations.[3] Even where experienced markers only are employed the element of chance is sufficient to invalidate the results in a considerable percentage of cases. On this point Thorndike says: "There is every reason to believe that of the students who were shut out a fairly large percentage would have done better than one-third of those who were admitted. Sooner or later there will be someone barred out, who if admitted would be the best man in the college. It is a moral atrocity to decide fitness for college on such a system."[4]

Professor E. A. Lincoln of Harvard University made a study of the relative value of high school record and C. E. E. B. examinations as a means of predicting success in college work. The students whose cases were studied had been admitted to Harvard College under the old plan entrance examinations. Lincoln[5] found a correlation between the entrance examination score and subsequent success in college of 0.47, P. E. 0.03. (Pearson coefficient.) Between record of high school scholarship and college success he found a correlation of 0.67, P. E. 0.02, or a difference of twenty points in favor of the high school record as a basis for predicting college success.

The Harvard New Plan

Shortly after Dr. Lincoln's study was made, Harvard adopted their so-called new plan of admission in which both the results of the C. E. E. B. examinations and the secondary school record of scholarship were taken into account in determining who should be admitted to Harvard College. When this last mentioned plan of admission had been in operation for several years, Dr. Bancroft Beatley, of the School of Education Faculty made a study similar to that of Dr. Lincoln. Between entrance examinations under the new plan and first-year college success Beatley[6] found a Pearson coefficient of correlation of 0.50, P. E. 0.02, and between high school record alone and first-year college success, a correlation of 0.56, P. E. 0.02. When high school record and entrance examination were combined and correlated with first year college success a correlation of 0.65, P. E. 0.02 was secured. This would indicate that when both the items referred to are included more factors essential to college success are taken into the account than where either item alone is made the basis of the correlation.

College Admission by Certificate

Admission by certificate from accredited high schools originated with the University of Michigan in 1871, and has been the plan generally employed by middle western, western, and southern colleges since that time. There are several different modifications of this plan.

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[3]Wood, Ben. D. *Measurement in Higher Education.* The World Book Co., Yonkers, 1923, pp. 141-145.

[4]Thorndike, E. L. *The Future of the College Entrance Examination Board.* Educational Review, Vol. 31, pp. 470-483.

[5]Lincoln, E. A. *School and Society,* Vol. 5, p. 417ff.

[6]Beatley, Bancroft. *School Review,* Vol. 30, p. 141ff.

The New England College Entrance Certificate Board. This board acts as a clearing-house for certificates of candidates who desire to enter New England colleges which admit on the certificate plan. The judgment of the board is based on the quality of work done by the graduates of each secondary school in the co-operating colleges. If candidates from a given school make a good record in the colleges attended by them that school is accredited or retained on the accredited list. If the representatives of a secondary school make a poor record in the colleges attended it is not accredited, or if previously accredited, its privilege is withdrawn. This plan is simple in operation and tends to stimulate the graduates of a secondary school to make unusual efforts to success in colleges attended, not only on their own account but, in a very real sense, because the honor of their preparatory school is also at stake.

The most serious defect of this plan of accrediting is that it takes no account of the differences in native ability of the pupils coming from the different secondary schools. It might very well happen that the candidates from a weak school were above the average in native ability. In that case their college success might very well be attributed more to their mental capacity than to the school in which they prepared for college. The graduates of a strong school, in any given year, might be very ordinary in ability and fail to make a creditable showing in the colleges attended. The weak school would be retained on the accredited list and the strong school would be disqualified. In reality there is very little significance to be accorded a list of high schools arranged in the rank order of the average marks earned by their respective graduates in colleges and universities during any given year. Unless such data covers a series of years, takes account of mental ability, and includes a fairly large number of candidates from each high school in the list, there is very little justification for granting or withholding accrediting privileges upon the results.

The Inspection Method. The inspection method involves the investigation of secondary schools by an outside agency, either a state high school inspector, connected with the State Department of Education, or by a representative of the State University, or such an organization as the North Central Association of Colleges and Secondary Schools. The inspecting agency sets up standards as to program of studies, number and qualifications of teachers, teaching load, library and laboratory equipment, buildings, salaries of teachers and all other matters pertaining to educational efficiency. The secondary schools which meet these standards are accredited and their graduates are admitted on certificate by the higher institutions of the state, provided they have complied with the particular requirements as to number of units and specific subjects as set up by the various colleges.

Among the advantages of the inspection method of accrediting may be included the undeniable fact that such inspection tends to stimulate the secondary schools to attain the standards of excellence fixed by the accrediting agency. The demands of such an agency often make it possible

for a high school principal to secure community backing for the necessary financial outlay to bring his school up to the standard.

Dangers of Autocracy. The most serious danger of the inspection method is that it puts into the hands of the inspecting agency the power of domination over the secondary school. Where this agency is a college or a university, or a group of colleges and universities, the inspection tends to over-emphasize college preparation. Since only about 25 per cent of those who enter high school ever find their way to college, it means that the interests of the 75 per cent who do not attend college are apt to become subservient to the interests of the 25 per cent who do attend college. On this account the inspecting and accrediting agency should be the state rather than any college or university, and the standards for accrediting set up by the state should be such as relate to the welfare of all citizens of a democracy rather than such as relate only to the very small percentage who may be able to attain a college education.

Admission on Superior High School Record Alone. A significant experiment is being tried out at Harvard College, which consists of admitting without examination to the college those graduates of secondary schools who stand in the top seventh of their graduating classes. Generally speaking, the preference is given to graduates of secondary schools which are accredited in their respective states, but there is no definite prescription as to size and resources of the secondary schools from which such candidates are admitted. In certain cases a Harvard alumnus living in the vicinity of a secondary school seeking to have a candidate admitted is asked to make an investigation of its standing and make report.

In his annual report for 1923-24, President A. Lawrence Lowell, speaking of the freshmen admitted without examination to Harvard College because they stood in the first seventh of their class, says: "Although the number so admitted was 214, or about one-fourth of the new freshmen, a proportion large enough to eliminate the effect of a few marked personalities, the trial of a single year has not been conclusive. For the year as a whole the men so admitted stood distinctly better than the average of the class, both in the smaller proportion who failed to win promotion, and in the larger percentage who achieved high standing. The plan seems undoubtedly good as a means of bringing earnest young men from school whose graduates do not ordinarily come here. Whether it will prove wise to use it for schools that prepare regularly for our entrance examinations is a more difficult question, to be answered after a longer trial."

Reduces College Domination. Selection for college on the basis of superior high school record only has the advantage that it very greatly reduces the element of college domination of the secondary school. No rigid requirement as to just the combination of subjects taken in the secondary school is made so long as the candidate stands in the top seventh of his graduating class. It is the total record that counts, and low marks made in the first or second year of secondary school, or in some particular subject, do not militate against the candidate, provided he has a sufficient

number of high marks to bring him into the first seventh of the class in scholarship.

One weakness of the method is that it makes high scholarship alone a criterion for college admission. As indicated by the studies of both Lincoln and Beatley, high scholarship in secondary school tends to indicate high scholarship in college, but we know from experience that if only the high scholarship group is chosen there will almost certainly be individuals among those rejected who could have attained distinction in college as well as in later life. Harvard's experiment, therefore, should be thought of as an encouraging sign pointing away from the old path of entrance examinations and rigid subject requirements. It opens a wide breach in the solid wall of conservatism heretofore surrounding the question of college admission.

Proposed Combination Method of College Admission

If a method of college admission is to be more satisfactory than any of those heretofore discussed it should include factors which are not now taken into account. There are two such factors, which undoubtedly have an important bearing upon college success, but which have received very inadequate attention in prevailing plans for college admission. These are mental capacity and character traits. Methods of measuring mental capacity have been perfected within the past ten years to the point where there are a number of standardized tests available for measuring prospective candidates for college admission. The best known of these is the Thorndike Test for College Admission which is designed for those who have had the equivalent of high school graduation. It requires three hours to give and is a combination test of secondary subject matter and mental capacity.

A great many colleges have been experimenting with mental tests recently with a view to discovering the relation, if any, that exists between scores in such tests and subsequent college success. For three years Stanford University required every new student to take the Thorndike test, after admission to the university. Records of all students were closely followed and these results were correlated with score in intelligence tests. The results of this follow-up were so satisfactory that the intelligence test was adopted as one of the conditions of admission to Stanford, beginning in October, 1924. The results for the first two quarters of the academic year 1924-25 seem to justify the addition of the intelligence test as one of the bases for admission. Mr. Karl M. Cowdery, psychologist in charge of giving, scoring and following up the results of the intelligence tests at Stanford, has found a correlation (Pearson coefficient) between score on Thorndike Intelligence Test and first quarter's university scholarship record of 0.41, P. E. 0.02, and between total high school record and first quarter's scholarship a correlation of 0.45, P. E. 0.02. When both intelligence test and total high school record were combined a correlation with college success of 0.58, P. E. 0.02 was obtained, an advantage over

the I. T. alone of 17 points and over the high school record alone of 13 points.

Predicting University Success of Students

At the beginning of the winter quarter 87 new students, 50 men and 37 women were admitted to Stanford. At that time Mr. Cowdery undertook to predict the university success of each of these students on the basis of their high school record and their intelligence score on the Thorndike Test. The statistical device known as the regression equation was employed in making these predictions. When the marks for the winter quarter were in, it was found that the predictions had come remarkably close to the marks actually earned. The writer drew the cards containing the data for twelve of these cases at random from the file. Counting five steps on the marking scale—A, B, C. D. and E—the predictions in ten of the cases fell within the same subdivision as the scholarship rating of that student at the end of the quarter. In two cases the term mark, or scholarship rating, came in a different subdivision of the marking scale from the one indicated in the prediction. In one case the prediction was C–, the mark earned by that student was B–. In the other case the prediction was D, the mark earned by the student was C–. Hereafter the Committee on Admissions and Advanced Standing of Stanford will have as one of the significant items for its consideration the predicted university success of the candidate, based on his Thorndike test score and his total high school record.

Weight of Character Traits

Another factor, which has not been given the weight which properly belongs to it, is that of character traits. Wherever pupils taking mental tests in high schools have been followed in their subsequent college careers, it has been found that certain individuals who made a comparatively poor showing in the mental test, have nevertheless been able to succeed in college. It has almost invariably been found, in connection with these cases, that favorable character traits entered into the situation to such an extent as to counteract the effect of mediocre mental ability.

Pasadena Studies. Mr. W. Hardin Hughes, Director of the Bureau of Educational Research of the Pasadena public schools, has recently followed up 127 graduates of the Pasadena High School to discover the relation between intelligence and character traits as factors in college success. Nine of these graduates of the class of 1923 of the Pasadena High School entered Stanford University. The student in this group of nine who made the lowest Thorndike score, i. e. 57, ranked third highest in scholarship at the end of his freshman year. It was found that this student had rated in the best 25 per cent of his graduating class in eleven of the twelve character traits which make up the Pasadena scale. Another of the nine students who ranked second in intelligence, with a Thorndike score of 92, ranked fourth in scholarship among his Pasadena classmates of the class of 1923. In high school he had been rated in the lowest 25 per cent of his class in such traits as regularity, persistency, trustworthi-

ness, sense of accuracy, respect for authority and control of attention. In self-confidence, however, he was rated in the top 25 per cent. The student, in this group of nine, who ranked highest in intelligence, with a Thorndike score of 103, stood first in the group also in scholarship. He had been rated by his high school teachers in the top 25 per cent of his class in every character trait included in the Pasadena scale.[7]

If Mr. Cowdery had had a reliable character rating on each of the 87 students who entered Stanford in the winter quarter, 1924-25, and it had been possible to reduce the ratings of the scale to a score comparable with high school scholarship rating and intelligence test score, he could have added this variable to his regression equation and would no doubt have been able to materially increase the accuracy of his predictions of university success. The addition of character ratings to the other items to be considered in admitting students to college is not urged simply on the ground that it would increase the accuracy of the predictions regarding college success. A much more important reason for emphasizing such ratings is that the college should be primarily concerned with the potential social usefulness of those whom it undertakes to educate.

Intellect as a Social Liability

A recent study[8] of the amount of education possessed by men behind prison walls, shows that there are more college graduates in our prisons than the ratio of college graduates to total population would lead us to expect. Trained intellects, without the balance-wheel of solid character, may become a social liability instead of a social asset. In addition, therefore to the I. Q. (Intelligence Quotient), and the A. Q. (Achievement Quotient), we should inquire into the P. S. V. (Probable School Value) of all candidates for admission to college.

Certain Advantages in Combination Method

The combination method of selecting candidates for admission to college, i. e. the development of a plan whereby total high school record—a scholarship rating based on all marks received in high school—intelligence test score on the Thorndike scale, or its equivalent, and a standardized scale for rating character traits, would have certain advantages over any other plan now in use. All of the studies herein mentioned—those by Thorndike, Lincoln, Beatley, and Cowdery — agree that the total high school record, reduced to an average mark or scholarship rating, is a better index of college success than either the entrance examinations of the C. E. E. B., or the intelligence tests, taken singly. In each case it was likewise discovered that where both high school record and entrance examinations, or high school record and intelligence test score were combined the result was a higher correlation between the two factors and college success than that found between either factor alone and college success. Experiments with character trait ratings indicate that the addition of a third factor—an objective measurement of important character

[7]Hughes, W. H. *Ed. Research Bulletin*, Pasadena, Vol. 3, 1924, p. 16.
[8]Murchison, Carl. *School and Society*, Vol. 13, pp. 633-640.

traits—would mean not only the enhancement of the predictive value of the combination of criteria employed, but also should result in the selection of a higher type of college students from the standpoint of social value.

Courses of Study Planned for Service

The adoption of such a method of selecting college material would mean that high schools could be left to determine their own course of study in the light of largest service to the individual pupil, the community, and the state. Such a course-of-study could be built up by each high school around a prescribed core of subjects essential to health, citizenship, and social cohesion, with freedom of election left to the individual student amounting to approximately one-half of the fifteen units required for graduation. In this state of emancipation from college domination the high school would be free to devote its energies to the social, the civic, the cultural, and the vocational aims so insistently proclaimed as its real goal, but under present conditions so largely neglected in practice.

The junior high school also could be relieved of the bogie of college entrance credits. The comprehensive examinations, where a minimum of eight units of secondary work, if passed with marks indicating power in the mastery of a given field of study, are accepted as sufficient evidence of ability to do college work, provided the candidate has had four years of secondary training prior to taking the examinations. Twelve units of secondary work, done in the three years of senior high school, could be in like manner accepted as the basis for the high school record in the proposed combination method of selecting students for college admission. This would assume a junior high school course of two or three years, but need not be concerned with the specific subjects taken in the junior high school. The junior high school could then become in fact as well as in theory an exploratory institution, where the child could discover his life interests and be ready for the differentiated curricula of the senior high school.

High School Autonomy

The combination plan would also be best for the colleges. What our higher institutions of learning want is the assurance that the students, sent up to them by the secondary schools, have not only the capacity to do college work but also have the seriousness of purpose to make effective use of the training which they receive. When it becomes clear to college entrance officials that a method of selection which takes account of total high school record (without regard to specific subjects taken so long as state board requirements for graduation have been met) intelligence score on a standard psychological test, and character trait ratings when taken together afford a superior basis for the selection of college students, these officials will adopt it. This would mean that entrance examinations, which tend to make coaching schools of all secondary institutions, as well as the practice of making minute prescriptions in the matter of subjects required for college entrance, could be abolished. In thus granting autonomy

to the secondary schools, colleges and universities would free themselves from the grind of giving and scoring entrance examinations, and could turn over to the state the thankless task of high school inspection and accrediting.

Stanford University has found that its standards of scholarship have not suffered, nor has it failed to attract a high quality of university material, through following a liberal policy in the matter of admitting secondary school graduates on the basis of excellence of high school scholarship rather than on the basis of a particular combination of subjects taken in high school. This policy is clearly stated in the president's report of 1907, as follows: "From the first the theoretical attitude of the University has been, that whatever is properly a high school subject is to that extent proper and effective preparation for university study; *that the high school curriculum is primarily a subject for secondary schoolmen;* that the University while lending its assistance by way of advice and insistence upon high standards, should avoid all *intent* and *appearance* of dictation."

A Prediction

It is safe for me to predict, therefore, that when the other institutions of higher learning in this section of the country signify a willingness to adopt a method of college admission along the lines herein suggested, wherein total high school record, mental capacity, and character trait ratings, are the determining factors, Stanford University will be ready to meet them more than half way.[9] In the meantime secondary school men should stand to their guns and resist every reactionary movement designed to enhance college domination by a return to the college entrance examination, or by increasing the number of specifically prescribed secondary units for college admission.

[9]Dean Woods of the University of California stated, at the California banquet, that the University of California was ready to consider favorably the idea of 12 units of work, earned during the last three years in high school, as the basis for college admission. The combination plan would safeguard such an arrangement.

IN TWENTY YEARS

In 1905 the *Committee of Nine* recommended "that biology be added to the list of elective subjects required for admission" (to the University). Reference to the article of Elizabeth Bishop in this number of THE QUARTERLY shows that by 1907 biology had a feeble beginning in the high schools of California, and that in 1924-25 biology was the dominating science in California high schools. Incidentally, a young teacher of biology in Tennessee is now out of jail on bond for teaching biology. Twenty years from now this will be news in Tennessee.

A SOCIAL PROGRAM IN THE JUNIOR HIGH SCHOOL

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IT IS an undisputed fact that the social development of human society has not kept pace with its economic and scientific progress. The life of today makes heavy demands upon the social natures of people, and the time has come when a definite social conception of education must displace the older individualistic conceptions—a social conception which will not be held as a bit of mere abstract philosophy, but which will rather react explicitly and constantly upon the every-day work of teaching.[1] The world war checked the application of this ideal for a period, and at the same time it brought every serious minded person to realize the supreme need for a social readjustment. Since the war, educators and laymen as well recognize better social understanding, better social relations, and better social ideals as objectives of education.

Whole Curriculum Must Be Socialized. The recognition of social efficiency as an important aim of education demands that the whole curriculum must become socialized, that the school environment furnish information, opportunities, and experience, and that it set standards of judgment and appreciation for important life activities. The accumulation[2] of knowledge and facts that will ultimately lead to freedom; the acquisition of habits, skills, and abilities that give satisfaction and ultimately may produce enduring beauty; and the establishment of attitudes, appreciations and judgments and ideals that are good and eventually may reveal God, are ends that challenge the most zealous educator.

With the schools in their present state of organization, this would entail analysis of each subject to discover its contributions toward the art of living together. The social functions of the school that are not a part of the informational or subject curriculum; the school administration and organization; the student body activities; all the forces that influence character building; standards of conduct and courtesy, creeds, codes, and other devices should be weighed to determine their worth to boys and girls engaging in a busy constructive program, where each is personally acquiring, socially adjusting, and mentally achieving for the social well-being of all.

Other Agencies Also Responsible. The work is not to be confined to the school's contribution alone, but all worthy contributing agencies should be solicited for co-operation in this paramount task of democracy. The Parent-Teachers' Association, clubs, community associations, the church

[1]Irving King, *Education for Social Efficiency.* D. Appleton & Co., New York, 1913, pp. 18 and 19.

[2]Charles E. Rugh, *"A Philosophy of Am. Sec. Education."* Report of Committee of Fifteen, California High School Teachers' Association, 1923.

and the home, all have in a democracy a responsibility and an obligation in training the youth of the land for social and moral efficiency.

General Aim, Social Efficiency. In this discussion, the general aim of the social program is recognized as Social Efficiency. Outstanding abilities in the various phases of social relations are presented as the specific objectives of the program. Each objective is considered as worth while from a three-fold standpoint: (1) Knowledge is necessary, but it must be knowledge that leads to freedom; (2) habits and skills are necessary, but they must give physical, mental, or social satisfaction that results in more beautiful living; (3) attitudes, appreciations, and ideals that are good are necessary, but they must evolve a better living together.

The following chart presents this plan, and suggests the means for realization:

Aim—Social Efficiency

OUTSTANDING ABILITIES IN VARIOUS PHASES OF EFFICIENT LIVING	THREE-FOLD NATURE OF ABILITIES
1. Healthful living. 2. Application of fundamental processes to simple scientific and social phenomena. 3. Discovery of interests and aptitudes. 4. Maximum use of native capacities. 5. Participation in a variety of aesthetic and recreational activities. 6. Membership in the school group. 7. Establishing and maintaining high standards of conduct in personal and group life. 8. Contributing to worthy home life. 9. Evaluating the past and noting contributions. 10. Understanding the significance of larger group relationships of the world today.	Knowledge that is true and that ultimately may lead to freedom. Habits and skills that give mental, physical, moral and social satisfaction that ultimately may result in beautiful living. Attitudes, appreciations and ideals that are good and that ultimately may reveal God.
	MEANS
	The school environment should furnish the facts, experiences, and the ideals and standards that contribute to the realization of social efficiency in its fundamental phases as set forth in the educational objectives for the junior high school. The subject offerings: the student body organizations, the school administration and organization, student body social functions and activities, all creeds, codes, measurement standards, and conventions, should be considered as worth while only to the extent to which they contribute to the three-fold nature of the abilities in one or more of life's phases of activity or to social relations as they are suited to the junior high school stage of development. The extended program should include a mutual co-operative effort with all worthy social agencies. It would be well that every item, detail and procedure for the new social program be considered as worth while, only to the extent that it leads to truth and freedom, gives satisfaction and lasting beauty and reveals goodness and godliness.

Each subject of the curriculum has definite contributions to make to the character building or social program. It is, then, evidently the responsibility of educators desiring social efficiency as a goal, to check their

curricular content by a definite plan and to proceed to eliminate worthless material and substitute that which is vital and socially worthwhile.

Opportunities for Social Contact and Pupil Activities. The success of the social program depends upon the enthusiasm, wisdom, judgment and instructive leadership of the teacher. The socialized program would, however, have an artificial setting if subject contributions gave the only opportunities for social expression. Although much has been said and written in recent years on the subject of social programs, few schools have definitely organized or planned social activities for all pupils.

Place of Schedule. Only a very small percentage of the pupils in the schools are engaged in special social activity. The social curriculum objectives are vague in the minds of administrators and very few have assigned sufficient time for them in the school schedule. If we are sincere in our belief that people need to learn how to live together better, it is urgent that more positive recognition be taken of the natural opportunities offered in the social contacts of pupils with one another and with their teachers, and that more definite plans be made for group activities for the realization of the social objectives of education. Each junior high school then should aim to associate all normal boys and girls in the group activities. Not only should pupils be given time for such expression, but the junior high school faculty should be given time to put into operation. during school hours, a social program. It is essential that junior high school teachers be chosen who have social dispositions, and who will engage their pupils in delightful social companionships and well-organized group life. A teacher, before entering a junior high school, should realize that the participation in and direction of the social activities of the pupil will be an important part of her work.

Need for Equipment. Enthusiastic directors, sympathetic teachers, active pupils and well-organized plans, do much toward putting into operation a social program. But there must be physical equipment. Club and social rooms, committee rooms and assembly halls are necessary. A well-equipped stage, an orchestra space, a music room, offices and conference rooms, game rooms, play grounds and courts, kitchen and sewing equipment, rest rooms, showers and swimming accommodations are all needed. In the absence of regulation equipment and accommodation, class rooms can often be used for various social purposes. Partial elimination of the formal rows of school desks and seats with the substitution of chairs and tables for a more social environment in the classroom makes a delightful transformation for social affairs.

Objectives of Social Contacts. Boys and girls assembled in clubs, parties, receptions, entertainments, concerts and plays, are living real lives and are spending leisure moments profitably or wastefully, depending largely upon their guidance. Participation in the band, the orchestra, the glee club, and the choruses, offers enriched experience for members. In fact, all student body activities help the boys and girls to "play, to work, to play again, to feel the zest of healthful living." Teachers should

help these young people to move more gracefully among their fellows; to delight in helping and in participating; to follow as well as lead; to know the joy of work; to co-operate; to be fair and square; to produce; to do their share; to entertain a wholesome attitude toward sex; to appreciate the wealth of our heritage from the past; to enjoy the beautiful; to converse with friends; to be thoughtful and considerate of others; to respect elders; to seek wisdom; respect beauty, and create worth-while things. In short, they should contribute to the health program; to the growth of a wholesome group consciousness; to the appreciation of the past, a love of the beautiful, and an ability to spend time in a worth-while manner; to the appreciation of the rights of others; to brotherly relations with fellowmen, and to a respect and reverence to God.

Club Life. It is the aim of many junior high schools to have every pupil enroll in a club activity. Where this is the practice, the time for the meeting of the club is during the regular school hours. It has been found very satisfactory to have teachers announce their "hobbies" and then permit the pupils to group themselves around the hobbies in which they are most interested. If one hobby proves to be very popular while another is not favored, it is possible to eliminate and substitute in such a way that everybody may find himself doing the club work that he wishes with his chosen teacher-guide.

The hobby idea takes care of the individual interest, and the freedom of choice permits pupils to group themselves in congenial, companionable groups. Welfare activities appeal to those who desire to render service. Pupils of special abilities and talents find club life in musical, theatrical, oratorical, and art groups very congenial. Nature lovers seek the nature clubs, and those groups interested in hikes and excursions. Some find joy in work around their favorite school subject. The organization of the club is very simple. Usually the teacher acts as guide, the pupils elect their president, secretary, and treasurer, and appoint committees as needed. The presidents of the various clubs are considered as assistant guides and work not only with the teacher-guide of the club, but in conjunction with the director of all the club work, hearing reports of the work of the different clubs and discussing plans for future programs. The head director, or co-ordinator, who usually is a vice-principal, is every ready to give inspiration and suggestions to those who need help and to unify plans in general inspirational meetings, festivals and parties.

Parties. Afternoon parties for home room groups and for any groups with a common interest add much to the social life of the school and afford natural opportunities for guidance and direction in the nicities and conventions of social functions. The social dance is not advised as a school function suitable for pupils of junior high school age. The wisdom of having evening parties is questionable. If they are given, however, chaperones should be most carefully chosen. Each girl's mother should be asked, either personally or by letter, to accompany her daughter or to approve of her chaperonage to and from the party. The school shares

with the home the responsibility for the safety of pupils to and from school during the day, but responsibility for night parties is much more serious and every safeguard should be taken.

School Organization and Student Body Activities

Many student body organizations have been set up after the form of the City, the State, or the Nation. It is not necessary here to set forth the advantages and disadvantages of them. The failure of so many attempted organizations has often been traced to the personality at the head. If student body organizations are permanent they must rest on something more basic and permanent than individual personality of the teacher. They must develop from a desire on the part of the participants, each of whom should bear his share of responsibility, and all should have a voice. The student body organization of a junior high school should be very simple and grow only as the needs are recognized and assumed by the students. Boards of control; student body councils; student body projects; lectures, plays, concerts, and entertainments; athletic functions; student body publications; financial enterprises managed by students—the store, cafeteria, shop stores, school shops, honor and award funds and special drives; attendance problems; merit systems; student assistant leagues; traffic supervision and excursion direction; student body festivals, carnivals and fetes, pageants, parades and contests; civic affairs; and a long miscellaneous list are suggestive of the type of activities in which students of junior high school age may participate in a perfectly natural, happy, appreciative, mutually co-operative fashion.

Representatives elected by the students from each of the six grade groups may form the chief executive body, which should meet with the principal and faculty representatives at least twice a month, and discuss the different problems that the students believe need attention. All activities are undertaken upon the advice and counsel of the administrative office of the school and the member of the faculty chosen as official custodian of funds. An unusual opportunity is offered here to give the young people who participate in these responsibilities an appreciation of the seriousness of the work and to help them to develop habits of right conduct and to establish high ideals.

Boys' councils, girls' councils, scholarship societies, athletic organization, stage craft society, oratorical and debating societies and their activities, together with class day ceremonies, carnivals, pageants, parades, fetes, stunt days, parties, plays, lectures, entertainments, moving picture shows, concerts, patriotic and special day and civic programs, drives, excursions and hikes, various competitions and drills, all are recognized as a part of the school and community socialized program.

Assembly. The purpose of the assembly is to bring pupils together in a democratic body to enjoy or participate in school government or instructional, recreational and inspirational programs. In well organized assembly schedules pupils also receive specific training in auditorium

conduct, and information of general interest. Uplifting and inspiring programs instill and develop ideals, attitudes and insights which lead to keen appreciation of the best forms of entertainment. The assembly program should aid also in producing like-mindedness in thought, habits, ideals and standards.

Conventions and Standards of Conduct. Effective, definite and direct instruction may be given to establish standards for conduct and courtesy, by the home room teacher, that is, if the school is organized so that the home room teacher is the most intimate and close advisor of the class group, if she is the one to whom the boys and girls go for counsel and advice, if she is regarded as the stabilizing influence of the group. However, very satisfactory work may be done by lectures and dramatization in the auditorium, but it will take the assistance of the home room teacher to follow up and see that the ideas presented are put into practice. Home economic classes may give concrete instruction involved in serving, catering and entertaining. The writing of an invitation, the proper acceptance, and all the correct social forms may be definitely given to groups in connection with their own social affairs. A club guide may have charge of a party or reception and the home room teacher co-operate by seeing that her pupils are able to conduct themselves in a well-bred way. When the boys and girls realize that they are going to an affair where it is the proper and expected thing to observe certain conventions, they are more than anxious to gain all the necessary information. It is very effective to present correct forms and conventions about a real social function.

Special Checking and Measuring Devices. When boys and girls have the importance of good conduct brought to their attention and are encouraged to weigh and measure themselves against widely approved standards, they are brought to the realization of discipline through the operation of social approvals and commendations. Through discussion, concrete instruction and definite lessons, or through assigned problems, they may participate co-operatively in setting standards for themselves and their co-workers. When these standards are agreed upon and set up with group approval, then the individual members naturally and almost unconsciously become sensitive to the social will and respond to it.

Codes and Creeds. There is nothing that the boys and girls of the junior high school age take more delight in than in the formation of school codes and creeds. The code of the Boy Scouts, of the Girl Reserves, of the Campfire Girls, and those of other schools, are inspiring for them to study. But when they become anxious to form their own, it should be regarded as an opportunity to bring together in a definite form the ideals for character and conduct that are real aspirations of their better selves. It is a wonderfully unifying opportunity. The adoption of a code should be accompanied by all the pomp and ceremony and formality becoming a most serious and important arrival at the goal of self-realization and moral thoughtfulness and an entering into the realm of idealism and socialized appreciation.

Control and Balance of Character. The use of creeds and codes and measurement scales is very helpful as a means of showing us where we are and to indicate where we are going in our social, moral, and ethical attainment; but there is no better index for the administrator to judge how successfully the pupils are being reached in a social program, than to make a survey to discover exactly how many of the pupils are actively participating in the social affairs of the school and in what capacity they participate, and in how many capacities they officiate. This survey should be followed by a comparative study with scholarship standing and actual school achievement. It is the responsibility of the administrator to follow up the growth of each individual, and to see that everything possible is done to make for an all round, well-balanced participation of each individual. We may check curriculum and all other offerings against our educational goals, but another checking should be in regard as to how the whole program is affecting the youth in his control and balance of character. It is a known fact that many times our scholarship pupils are not social participants, or that our athletic leaders and social leaders are not up to grade in scholastic attainments. And yet what is done to bring about the right adjustment?

Influencing Agencies. The socialized aim of education has extended the educational routine beyond the walls of the school. The school becomes an agent for solidarity. In an ideally socialized educational program, the interests of the home, the church, the community, the press, the club, the library, the movie, and any and all agencies that influence the growth of the boys and girls, should be brought together and centered upon the pupil for the best continuity and evolution of the traditional heritage of American socialized democracy. It should be the aim of the social program as it comes to its fuller realization:

1. To re-center the interests of the community on the child in so far as they have contributions to make toward his social progress.
2. To bring about harmony and common understanding between the school and co-operative agencies concerning the aims and purposes of social education.
3. To educate a public sentiment for social progress.
4. To accept and share all worthy contributions in the interest of the child.
5. To develop consciousness of unity and purpose.
6. To develop community consciousness.
7. To develop a consciousness of solidarity.
8. To foster a mutual co-operation scheme for the best social, moral, and ethical realization of the boys and girls:
    a. With the home.
    b. With the church.
    c. With the club life.
    d. With the recreational and aesthetic life.
    e. With the hygienic factors.
    f. With the industrial factors.
    g. With the press.
    h. With the library.
    i. With any other worthy contributing factor.

THE TEACHER'S PROFESSIONAL GROWTH

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FUNDAMENTAL growth with resulting progress in any profession is possible only through constant study in the field of one's work. Only thus does one give himself a fair chance to grow under the stimulus of the latest scholarship, the most recent scientific findings and the best practices which are applicable in his work.

The rapid strides which are taking place in education render it especially important that each teacher, who wishes to afford himself the largest chance to achieve that measure of success which is possible to him, should constantly pursue a well balanced program of reading and study. This study program should be calculated to keep answered for the teacher, in accordance with the latest scholarship and scientific findings, certain basic questions (1) in the field of educational theory, and (2) in the subject that he teaches.

Questions in Educational Theory. In the field of educational theory one's reading should enable him to answer each of the following basic questions in keeping with latest scholarship:

1. For what purpose, to achieve what ends, does organized society maintain a system of public schools?
2. What experiences should children have and what subject matter should they master in order that society's purposes in establishing schools may be achieved?
3. How should one organize his school or class into groups so that the pupils may work most effectively?
4. What procedures in teaching are productive of the largest and most satisfactory results?
5. With what finish, in keeping with what standards, should school work be done in order to insure the satisfactory realization of society's purposes in maintaining schools?

A brief bibliography in the field of educational theory, which would aid the high school teacher in answering each of the five questions suggested above, is as follows:

Question 1.
Chapman and Counts—*Principles of Education*, Part III.
Bagley—*Educational Processes*, Chapter 3.
Rapeer—*Teaching Elementary School Subjects*, Chapter 1.
Koos—*Recent Concepts of Aim of Education*, Elementary School Journal, March, 1924.
Colvin—*Sources of Educational Objectives*, School and Society, May 12, 1923.

Question 2.
Uhl—*Principles of Secondary Education,* Part VI.
Waples—*Procedures in High School Teaching,* Chapter 2.
Charters—*Curriculum Construction.*
Rugg—*The Social Studies,* Part II, Twenty-second Yearbook of the National Society for the Study of Education.

Question 3.
Chapman and Counts—*Principles of Education,* Chapter 2.
Waples—*Procedures in High School Teaching,* Chapter 4.
Dickson—*Mental Tests and the Classroom Teacher.*

Question 4.
Chapman and Counts—*Principles of Education,* Chapter 23.
Parker—*Methods of Teaching in the High School.*
Wilson, Kyte and Lull—*Modern Methods in Teaching,* Chapters 5 to 10.

Question 5.
There is little that is definite to enable teachers to answer this question in the field of secondary education. As yet the standards have not been developed to the extent that they are available in the elementary schools. See, however, list of tests for use in high schools in Waples' *Procedures in High School Teaching,* pages 326-330.

The following books are of such general value to high school teachers that they seem worthy to be listed to supplement the specific lists noted in connection with the above questions:

Waples—*Procedures in High School Teaching.*
Colvin—*Introduction to High School Teaching.*
Johnson—*The Modern High School.*
Foster—*Principles of Teaching in Secondary Education.*
Judd—*Psychology of High School Subjects.*
Morrison—*The Teaching Technique of the Secondary School.*
Nutt—*Principles of Teaching High School Pupils.*
Parker—*Methods of Teaching in High School.*
Inglis—*Principles of Secondary Education.*

Questions Relating to Subject. In the field of the subject one teaches his study program should keep him qualified to answer in up-to-date fashion such questions as these:

1. What are the latest additions of fact and theory in the subject?

2. What is the relative value of the various phases of the subject in achieving the ends of education?

3. What does the latest available evidence indicate in reference to the procedures which are most effective in teaching the subject?

It is impossible, of course, within the proper limits of this discussion to indicate the bibliography of value for the teacher of each high school subject. Each teacher should determine this for himself, however, in the field of his subject and oblige himself to make constant additions to his study library, and to use this added equipment in keeping himself up-to-date. In Waples' *Procedures in High School Teaching,* pages 315 to 320, will be found helpful books which will be of interest to teachers of special subjects. The bibliography is listed by subjects and is convenient to use.

PRE-VOCATIONAL COURSES FOR GIRLS

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THE problem of vocational training for girls is difficult to solve. There is always the uncertainty as to what the girl's future is going to be. Is she going to have a career, so-called? Is she going to be a home-maker? Maybe she will combine the two. At any rate, it seems necessary to prepare for all "emergencies."

The Home. First consider the question of the girl as an embryo home-maker. Conditions at the present time do not indicate any standardization of the home. In one of the large cities recently, comments made to the writer were to the effect that the commodious homes of the last generation were being deserted because of inability to get competent help. This is true in many cities. People live in apartments, in flats, in bungalow courts. However, no matter what a girl's calling in life may be, there will always be a place that she calls home. If education is meeting the need, the girl will know how to do her share in the care of that home.

Aims in Home Economics. In the junior high school, the home-making course is not vocational nor pre-vocational in nature, because the interest of the girl of this age is not along that line. She is interested in dress in order to make herself attractive. In some cases, it is true, there is the altruistic desire to help mother, but for the most part the girl is interested in home only to the extent that is necessary for her personal convenience. In senior high school courses, more differentiated work in home economics serves to provide skill in making clothes, hats, in cooking lunches and dinners, in ornamenting homes. The work is based upon the principles of science and art. Neither the atmosphere nor the output is on a factory basis. Occasionally there is co-operation with trade classes. This course gives the girl an opportunity to try her skill in the fields of millinery, nursing, specialty shop work, making children's clothes, costume design, interior decoration, dressmaking, art needle work, cafeteria and tea-room management, even shampooing and manicuring. She has the chance to sample various lines that may suggest a wage earning occupation later. While the aim in home economics is general training for worthy home membership, the teacher should not fail to call attention to the opportunities offered in the field of employment.

Opportunities in the Crafts. Closely allied to this work are the arts and crafts, where weaving, leather work, jewelry work, lace making, bead work, flower making, basketry, pottery, enamelling, lamp-shade making, batik work, and various other crafts may serve to show to girls attractive lines of work. There is opportunity for developing a general craft shop for girls, preferably in the junior high school, similar in organization to the general shop for boys that has become a feature of the industrial arts

course. Along this same line are the fields suggested in art training, such as poster work, commercial art, making of Christmas cards, menu cards, book ends, block prints, parchment shades. One of the advantages of this type of work is that in later life, housewives can follow up their early training without neglecting home duties and their children, if they find it necessary to supplement the incomes of their husbands in order to bear the tremendous expenses that are involved in educating their families and maintaining suitable standards of living.

Lucky are the parents whose daughters have the inclination to be home girls. In this motion-picture-obsessed, speed-crazed, money-mad age, it is to the girl whose interests are domestic that we must look for stability to hold standards that have been the backbone of our American homes.

Pre-Vocational Courses

Commercial Work. The second consideration is that of the direct pre-vocational courses and other general courses that offer pre-vocational suggestions. One of the first to be considered is that of commercial work. A great percentage of our girls go into some phase of work in the industrial world. It is the consensus of opinion of educators who have studied the problem, that the junior high school should offer merely introductory courses in business training, stressing ethics and elementary business practice, and that the more specialized courses of stenography, salesmanship, bookkeeping, and the like, should be postponed to the last two years of high school, just before the young people leave to go into the business world. By this arrangement they have acquired a broad general training upon which to build, and have gained speed and accuracy that they can use immediately in the business world.

Special Courses. If for any reason certain children should be deprived of the privilege of a complete high school course, somewhere along the line should be provided special courses that will fit these children to go into whatever line they are capable of doing, always keeping in mind that skilled stenographers and expert accountants are not found among younger children, but that pupils of junior high school age should be trained in routine office work, card filing, and in those subjects that can immediately function. Later they should be able to continue their studies in evening schools or opportunity schools of some sort.

Academic Subjects Open Opportunities. The general fields, or the so-called academic subjects, offer many chances for suggestions for vocational work. Journalism, library work, bookbinding, story writing, and story telling are some of the fields opened up in the English courses. In Cleveland there is a class where girls are taught to tell stories to entertain children in libraries or in homes where they are caring for children in the absence of mothers. Dramatics suggest reading for entertainments and even training for the stage. It is commendable that the right kind of teaching discourages would-be motion picture actresses who are lured by appeals of romance and adventure and dazzled by dreams of high salaries.

So one can analyze the various academic subjects as they should be taught today, and find that in them there is ample opportunity to suggest fields which may be followed up in later vocational courses. In the line of science, there are possibilities in flower culture, landscape gardening, plant propagation. Not infrequently these unit courses are offered in junior high schools. For after all, the whole field in junior high schools particularly and to some extent in senior high schools, is the unfolding of opportunities for children to find out what they like and in what field they are best adapted to work.

In conclusion, the problem of the administrator in adapting his course of study is to determine what is most desirable for his community and his school. This involves not only a knowledge of what has been done by the graduates, but of what it is possible to do in the light of modern progress.

HAND WASHING BEFORE LUNCH

What are you doing to establish health *habits* in the daily life of the pupils of your school? A faculty committee in one of the fine high schools of California last year made a survey of the habits of pupils in hand washing before lunch with the startling results revealed in these paragraphs from the report:

"An eminent authority on public health has recently stated that if it were possible to enact and enforce a single health measure which would go farthest in reducing communicable diseases in the United States, he would select as most important the washing of hands before meals. There is little doubt but that in the large majority of our communicable diseases the infecting agent gains entrance to the body by way of the mouth or nose. Thorough hand washing before meals then is a simple yet effective sanitary measure, the importance of which cannot be too thoroughly emphasized."

SURVEY OF HAND WASHING BEFORE LUNCH

	Junior High School		Senior High School		
	Boys	Girls	Boys	Girls	Total
First day	4	8	20	22	54
Second day	3	21	5	12	41
Total, two days	7	29	25	34	95

"Some interesting data on this point were obtained by surveyors stationed in the toilet rooms at the beginning of the lunch periods. Reference to the table discloses the remarkable fact that a total of 54 pupils washed their hands on the first day. On the following day 41 pupils indulged in hand washing—a total of 95 for the two days. Allowing for the small proportion of pupils that go home for lunches this leaves an astonishing total of some one thousand individuals who eat lunches each day without previous washing of hands. . . . Need for education in this matter is indicated."

AN I. Q. STUDY

FREDERICK M. FOSTER
Hayward Union High School

THE Hayward Union High School district contains a population largely devoted to agricultural pursuits. As it lies on San Francisco Bay, the inhabitants represent many nationalities and the high school is quite cosmopolitan in the make-up of its students. The instruction of this varied group presents many problems and it occurred to me, when recently giving mental tests for the purpose of sectioning classes, that a study of the I. Q. of the various nationalities might be of value. The children tested form a relatively unselected group as they include all of the members of the high eighth grade of three grammar schools and also the first year class of the high school.

The Terman group test was given and 249 students were tested. While the students were giving the information requested on page 1 of the test I asked them to give also the nationality of their father. This nationality was then used as the nationality of the child. This procedure is open to a number of objections but at least it has the merit of being uniform. In many cases the nationalities of both father and mother were given and later other cases were discovered. It is interesting to note that there is comparatively little admixture of nationalities and that practically all of this admixture occurs among the northern European peoples. The Italians, Portuguese, and Spanish show almost no intermarriage among themselves or with the northern peoples.

Seventeen extra-American nationalities were represented. There were 3 Austrians, 1 Canadian, 15 Danish, 12 English, 3 French, 14 Germans, 6 Irish, 10 Italians, 2 Japanese, 1 Norwegian, 55 Portuguese, 2 Russians, 6 Scotch, 1 Slavonian, 8 Spanish, 7 Swedish, and 1 Welsh. In the study of the I. Q. the small number of nationals made it advisable to take no account of the Austrians, Canadians, French, Japanese, Norwegians, Russians, Slavonians, and Welsh. I am aware that the classification of "American" is open to objection on the part of the strict ethnologists. The exigencies of the case, however, called for this classification and I believe that it is justifiable. Ninety-two of the children are thus classified.

For the purpose of gathering the statistics it seemed advisable to make a somewhat closer division of the I. Q. than that made by Dr. Terman (p. 79, Measurement of Intelligence). I therefore made the division with a group interval of ten from 70-139, rating 130-139 as upper very superior, 120-129 lower very superior, 110-119 superior, 100-109 upper normal, 90-99 lower normal, 80-89 dull, 70-79 borderline deficiency.

The following table shows the median I. Q. of the various nationalities

together with the percentage of the whole number considered in gathering the statistics:

TABLE I.

Nationality	Median I. Q.	% of Whole
Americans	103	45
Danish	95	6
English	100	5
Germans	100	7
Irish	95	2
Italians	92.5	4
Portuguese	88.6	24
Scotch	100	2
Spanish	83.3	8
Swedish	102.5	3

Another grouping according to the median I. Q.:
Upper Normal—Americans, Swedish, English, Germans, Scotch.
Lower Normal—Irish, Danish, Italians.
Dull—Portuguese, Spanish.

The following table shows the division of the children of each nationality according to the percentage of the national whole in each I. Q. subdivision:

TABLE II.

	Amer.	Dan.	Eng.	Ger.	Irish	Ital.	Port.	Scot.	Span.	Swed.
Upper Very Superior	4	0	0	0	0	0	0	0	0	0
Lower Very Superior	4	6	0	0	0	0	0	0	0	0
Superior	18	13	0	21	0	10	0	16	0	28
Upper Normal	32	13	50	28	33	10	10	33	0	28
Lower Normal	25	33	33	28	33	40	34	33	37	28
Dull	10	26	16	21	33	20	32	0	37	0
Border Line	4	6	0	0	0	20	21	16	25	14

These percentages speak for themselves. Besides presenting a strong argument for the sectioning of classes on the basis of the I. Q., they show the probable make-up of each section in nationality. They also show which nationalities are apt to drop out of the high school before graduation, and from what nationalities the future leaders of society may be recruited.

I am aware that no exhaustive conclusions can be drawn from these statistics because the number of children taking the test is so small. It is also possible that children taken from classes other than the agricultural would show a different I. Q. when the same nationality is considered. I would therefore welcome additional statistics from other investigators so that further conclusions might be drawn which would have the weight of larger numbers of children, different occupations, and a wider locale. It is also obvious that no nationality as a whole can be praised or blamed on account of the showing made by these few children, and I can only hope that this investigation will lead to further work by others along the same line.

THE HISTORICAL BACKGROUND OF THE CALIFORNIA SOCIETY FOR THE STUDY OF SECONDARY EDUCATION

THE California Society for the Study of Secondary Education had its first life impulses in 1892. Its early roots were in the educational soil of Alameda County. At a county institute in Oakland in 1892 the Alameda County High School Teachers' Club was organized. Professor Elmer E. Brown, then head of the department of pedagogy at the University of California, was elected president, and Mr. C. L. Biedenbach, then a teacher in Oakland High School, was made secretary. The club held monthly meetings, and continued in existence until January 1, 1902.

The work of the Alameda High School Teachers' Club, especially in the matter of articulating Alameda County high schools with the University, attracted attention outside of Alameda County, and Mr. Richard D. Faulkner, who was president of the California Teachers' Association in 1901, invited the Alameda County High School Teachers' Club to participate in the program of the California Teachers' Association in session at Pacific Grove. At this meeting the Alameda County High School Teachers' Club evolved into the California High School Teachers' Association, January 1, 1902, with Mr. C. L. Biedenbach as president, and Mr. A. E. Shumate, then principal of the San Jose High School, as secretary. The first annual meeting of the California High School Teachers' Association was held in Los Angeles, December 31, 1902, to January 2, 1903.

Committee of Nine

The need for co-operative studies of a wide range of high school problems was realized in the early experiences of the California High School Teachers' Association at a conference of members of the High School Teachers' Association with members of the Academic Council of the University of California, April 23, 1904. A joint committee of nine members, consisting of three named by the president of the University, three by the president of the California High School Teachers' Association, and three by the president of the California Teachers' Association, was appointed "to discuss questions of common interest and report to a future conference". The personnel of the *Committee of Nine* follows: Prof. Elmer E. Brown, chairman; Prof. Irving Stringham, Prof. A. L. Lange, Dr. A. W. Scott, Fred H. Clark, Herbert Lee, A. E. Kellogg, G. S. Wells, and C. L. Biedenbach, secretary. Prof. Brown later retired from the committee and was succeeded by Dr. E. C. Moore, Prof. Stringham then being elected chairman.

The *Committee of Nine* held regular monthly meetings. Its report on University Entrance Requirements was filed with the Academic Council

of the University the following September and its report on improvement of the elementary schools was made December 27, 1905.

A perusal of the report of the *Committee of Nine,* December, 1905, is profoundly interesting in showing that the problems of curriculum, organization and methods were as perplexing to the educational leaders of that day as these same problems are to teachers and school administrators today. That report is also an inspiring forward looking document which tells how long and tragic are the struggles for modification and improvement of formalized and established educational theory and practice. The published report on the work of the *Committee of Nine* is here reprinted as an interesting part of the educational history of California:

1. The different parts of our public school system are not separated by hard and fast lines. Their interests overlap. They should co-operate to secure and to promote their common interests.

2. There should be flexibility in the entrance requirements of the University in order to permit the high schools to fulfill their proper functions. Pupils must be permitted to postpone as long as possible the choice of college work.

3. Many subjects are properly interchangeable between adjacent periods: For example, certain portions of Latin could be taken earlier than the present high school period and other portions could be postponed until the University period.

4. There should be no increase in the time requirements of the present elementary and secondary courses nor addition to the hours of preparation.

5. Above the sixth grade, through the high school and University years, there is a natural grouping of studies by two year periods. The education of the seventh and eighth years belongs to the secondary period. A reorganization of the work of these grades is therefore necessary.

6. The material of study and the methods of teaching in the seventh and eighth grades should be of high school character: therefore, the teachers should possess the qualifications of high school teachers. This implies the departmental plan of assigning teachers, but does not mean the requirement of a certificate other than that of the regular grammar grade.

The resolutions, adopted by the committee, guided by these principles, follow. The first seven relate particularly to the high schools and the University of California.

1. That the University of California announce publicly its actual practice with reference to giving credit for manual training.

2. That the admission requirements for entrance to the College of Mechanics, Mining, Civil Engineering and Chemistry be changed so that either Latin or Greek may be offered in place of a modern language.

3. That biology be added to the list of elective subjects required for admission.

4. That some other science be accepted as a substitute for physics.

5. That the University should offer the whole of Latin subject seven of the preparatory subjects (i. e., Cicero and Virgil) as a college course.

6. That entrance to the College of Commerce be made possible without the requirement of Latin.

7. That the reading in translation of the Iliad, the Odyssey and the Aeneid be substituted for the "Classic Myths" in the English requirements.

The resolutions relating to elementary and secondary school work are grouped by subjects.

In Language:

1. The teaching of a foreign language in the seventh and eighth grades should be recommended as an elective.

2. Such language should be French or German. Where local demand exists, Latin may be introduced.

3. Such language shall be taken as a substitute for other work now taken and only by those electing it.

4. Such foreign language shall be recommended for school systems large enough to supply a course in some one or more selected schools.

5. The language shall be taught by (a) a special teacher, (b) the regular class teacher, or (c) by a regular teacher working in the department plan, as local conditions determine.

In Mathematics:

1. That as a substitute for much of the present seventh and eighth grade arithmetic that is unnecessary or worse, there be a course in mathematics to include the use of the equation and certain applications of geometry, particularly such as are helpful in the work of manual training.

2. That the subject matter to be introduced be embodied in a printed manual, following, in its essentials, the work laid out in W. G. Spencer's *Inventional Geometry* and S. E. Coleman's *Algebraic Arithmetic.*

3. That the manual be so constructed as to combine the subjects of geometry, algebra, and arithmetic in a unified course of study which shall take the place of the present arithmetic of the seventh and eighth grades.

4. That geometrical drawing, both by free hand and by the use of instruments, be emphasized in the manual.

5. That the manual be the only textbook in the hands of the pupil.

6. That the manual be prepared under the auspices of the State Board of Education.

7. That the teaching of these subjects be entrusted only to persons who are specially fitted for this work.

8. That the subjects taught be connected as much as possible with the facts and experiences of every day life.

In Science:

1. That, as far as possible, the nature study work be closely allied with the personal experience of the child: for example, that it center about a school garden or have to do with objects and circumstances in the child's environment.

2. That it would not be wise to attempt to make of the nature study work a definite scientific course of study, lest this might tend to eliminate the child's growing love and interest for natural objects.

3. That the work in nature study should be so correlated with the work in physiology, reading, and physical geography as to make these studies more attractive and prevent the work of nature study from falling as an additional separate subject upon an already overburdened curriculum.

4. That no textbook should be put in the hands of the child for this subject, but as many simple illustrative experiments as possible should be performed.

In History:

1. That too much time is devoted in the grammar school to United States history and technical problems connected therewith.

2. That a better articulation of the secondary and elementary schools would make it possible to shorten the course in United States history and thus afford room for more work in general history of a biographical nature.

To properly round out the suggestions made in the preceding resolutions, the following was also adopted:

That, to secure most efficient service, teachers should be selected by boards of education from a list proposed by the superintendent and the principal of the school to which the assignment is to be made.—C. L. Biedenbach, Secretary.

Later Developments

Between 1905 and 1922 the California High School Teachers' Association made important contributions to the field of secondary education through studies, papers and discussions given before the annual meetings of the association. But no general committee was created following the *Committee of Nine* until the appointment of the *Committee of Fifteen* in 1922. During the earlier years of the association, the annual meetings were held at Berkeley in connection with the summer sessions of the University of California. But in the last five or six years of the life of the association, annual meetings were also held in association with summer sessions of the University at the Southern Branch in Los Angeles. The proceedings of these sessions were for many years published in the special August number of the *Sierra Educational News.*

Organization of Committee of Fifteen

In February, 1922, the directors of the California High School Teachers' Association authorized the president of the association to appoint a *Committee of Fifteen* to examine into, and report on problems affecting the high schools of the State. In a letter dated March 10, 1922, and addressed to the high school principals and teachers of California, the problem was stated as follows:

To the end that the purposes and objectives of secondary education and the methods of accomplishing such purposes and objectives may be better understood, we propose:

That the high school teachers of California, individually and in faculty groups, enter upon a study of the purposes and objectives and methods of instruction of secondary education.

That a Committee of Fifteen, representative of the field of secondary education, be appointed, the duties of this committee to be:

1. To define the purposes and objectives of secondary education.

2. To state the range and character of instruction to be given, including needed changes in courses of study and methods of instruction.

3. To suggest a group of typical courses of study sufficiently wide in scope to meet the different needs of pupils living in the several parts of the state and under varied social and economic conditions of life.

In order to secure leadership for the contemplated study, application was made in the spring of 1922 to the University of California for co-operation with the Research Department of the University, and provision whereby Professor Charles E. Rugh should be released from academic duties that he might be enabled to assume the chairmanship of the *Committee of Fifteen*. This application met the hearty approval of the Dean of the School of Education and of the President of the University. To carry out this plan of co-operation, the University of California appointed Professor Rugh as Acting Director of the Bureau of Research and Service for the year 1922-1923, and on April 20, Professor Rugh accepted the chairmanship of the *Committee of Fifteen*. By this arrangement the University was enabled to assist financially in the high school study.

The co-operation of Stanford University, and the University of Southern California also was sought in membership on the *Committee of Fifteen*. The Deans of the Schools of Education of these two universities gave cordial assistance, and William M. Proctor, professor of education, represented Stanford University, and Frank C. Touton, professor of education, represented the University of Southern California on the committee. By this arrangement the organization brought together for purposes of research and study, the education departments of our three great universities. The other twelve members of the committee were drawn from the high school faculties and city administrative forces of California. The personnel of the entire committee follows:

Charles E. Rugh, Chairman, Professor of Education, University of California, Berkeley.

Elizabeth Arlett, Principal, Alexander Hamilton Junior High School, Oakland.

A. J. Cloud, Chief Deputy Superintendent of Schools, San Francisco.

Essie L. Elliott, Head of the Department of Home Economics, Manual Arts High School, Los Angeles.

Merton E. Hill, Principal, Chaffey Union High School and Junior College, Ontario.

George C. Jensen, Principal of Secondary Schools, Eureka.

Vierling Kersey, Director of Part-Time High School and Principal, Polytechnic Evening School, Los Angeles.

T. S. MacQuiddy, Principal, Union High School, Watsonville.

Emma L. Noonan, Teacher of Mathematics, Girls' High School, San Francisco.

William Martin Proctor, Associate Professor of Education, Stanford University.

Frank Charles Touton, Associate Professor of Education, University of Southern California, Los Angeles.

Sarah M. Sturtevant, Dean of Girls, University High School, Oakland.

Alice Ball Struthers, Vice-Principal, McKinley Junior High School, Los Angeles.

Robert J. Teall, Principal, Union High School, Madera.

Clyde M. Westcott, Head of the Science Department, Hollywood High School, Los Angeles.

Ex-Officio Members

Horace M. Rebok, President of the California High School Teachers' Association, Superintendent of Schools, Santa Monica.

Arthur H. Chamberlain, Committee Secretary, Editor *Sierra Educational News*, San Francisco.

Through the active co-operation of ten members of the *Committee of Fifteen*, Chairman Rugh succeeded in organizing a number of studies which examined critically into some of the problems affecting the high schools of California. Two meetings of the whole committee were held—one in Los Angeles in December, 1922, and another at Yosemite in May, 1923. The chairmen had occasional conferences with individual members of the committee. The studies undertaken were completed and filed with the officers of the High School Association in the spring of 1924, and the reports were published in May, 1924, in a book of four hundred and six pages, entitled, *Report of Committee of Fifteen, California High School Teachers' Association.*

At the annual meeting of the association in Berkeley in July, 1924, a resolution was passed requesting the officers to devise ways and means for continuation of the types of studies begun by the *Committee of Fifteen.* Several plans of organizing and financing research work under the auspices of the association were considered during that year, with the result that the directors of the association were called into special session at Santa Barbara in May, 1925, to consider the advisability of re-organization. At this meeting the directors resolved to incorporate the *California Society for the Study of Secondary Education* under the laws of California, as a non-profit, co-operative organization, and as the successor of the *California High School Teachers' Association.* Articles of incorporation were filed with the Secretary of State, May 6, 1925, and the entire body of directors of the old association were named as incorporating directors of the new society. Thus has eventuated a legally incorporated educational organization for professional service, begun with the organization of the Alameda County High School Club, in August, 1892—thirty-three years ago.

H. M. R.

NINETEEN YEARS AGO

In response to an invitation sent out by President Wheeler at the request of the Committee of Nine to consider the question of Commercial Education in the Schools, about sixty representative school men and women met in the Faculty room at California Hall at two o'clock.

Principals Herbert Lee of Mountain View, F. L. Talbert of Morgan Hill and J. H. Francis of the Los Angeles Polytechnic High School opened the subject from the High School point of view. Professors Plehn, Miller and Hatfield presented the University side of the question. A general discussion followed, the result being a fairly unanimous agreement that Book-keeping and Stenography and Typewriting should be given credit as University entrance subjects.

President Wheeler announced that stenographic notes of the discussion had been taken and that an account of the proceedings would be published and distributed by the University in due time.—*From Minutes of California High School Teachers' Association, March 10, 1906.*

STUDIES IN SECONDARY EDUCATION

Conducted by MERTON E. HILL
Principal, Chaffey Union High School and Junior College, Ontario

In this and several succeeding numbers of THE QUARTERLY, *Merton E. Hill, Principal of the Chaffee Union High School and Junior College, will be responsible for a series of suggestive Studies in Secondary Education. These studies will be largely drawn from the field of experience and from teachers and principals on "the firing line". The list of books suggested by Mr. Hill in this number of* THE QUARTERLY *suggests what teachers are now reading. "The Selected Problems" call attention to many of the perplexing problems daily arising in the schools. "Making the School a Civic Center" is a startling exhibition of the complexity of the high school program of today. Laymen and teachers who are weeping over the passing of the "good old days" should intellectually digest this analysis of some of the functions of the modern high school.*

In the next number of THE QUARTERLY *Mr. Hill will submit selected problems on organization, under the title "The Principal and His School"; also solutions for a number of classroom and curricular problems proposed by teachers.*

EDITOR'S NOTE.

ALL teachers of high school subjects in our junior and senior high schools, principals and superintendents are students of secondary education; these are all on the "firing line" testing out the theories relative to education, discarding those that seem unsatisfactory and putting into practice those that will work.

There is need for a means of exchanging views, of acquiring information, and of learning how others do things. THE CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, issued by an association of secondary teachers, principals, and superintendents of California is what we have needed. The space given to "Studies in Secondary Education" will be devoted to presenting the best in educational thought as teachers in the service set forth their ideas.

There is a special need that the function of the high school, the objectives of secondary education, the function of departments, and the latest experience in administering the course of study be studied, discussed, and opinions regarding these things evaluated. There should be collected those readings in secondary education that have been most helpful to the teachers. Recently, in reply to the question, "What six books have been most helpful to you?" more than one hundred teachers and principals submitted the following:

Bagley—*The Educative Process.*
Bagley—*School Discipline.*
Baker—*Education and Life.*
Bobbitt—*The Curriculum.*

Bobbitt—*Curriculum Making.*
Brewer—*Vocational Guidance.*
Brown—*The American High School.*
Brown—*The Project Method in Education.*
Brown—*Sixty Units of Business English.*
Bode—*The Fundamentals of Education.*
Bolenius—*The Teaching of English.*
Brumbaugh—*The Teaching of Sunday School.*
Butler—*The Meaning of Education.*
Cooley—*Teaching Home Economics.*
Clement—*Curriculum Making.*
Colvin—*An Introduction to High School Teaching.*
Colgrove—*The Teacher and the School.*
Cubberley—*Educational Administration.*
Cubberley—*Public School Administration.*
Cubberley—*The Principal and His School.*
Cubberley—*The History of Education.*
Charter—*Methods of Teaching.*
Chapman and Counts—*Principles of Secondary Education.*
Davis—*The American High School.*
Davis—*The Junior High School.*
Davis—*The Work of the Teacher.*
Davis—*The High School Course of Study.*
Davis—*High School Teaching.*
DeGarmo—*Principles of Secondary Education.*
Dewey—*Democracy and Education.*
Dewey—*How We Think.*
Dewey—*New Schools for Old.*
Dewey—*The Schools of Tomorrow.*
Eastman—*Enjoyment of Poetry.*
Fairchild—*The Teaching of Poetry.*
Foster—*Principles of Teaching in Secondary Education.*
Freeland—*The Improvement of Teachers.*
Graves—*History of Education.*
Grant—*Acquiring Skill in Teaching.*
Halquest—*Supervised Study.*
Halquest—*The Textbook—How to Judge and How to Use It.*
Hall—*Adolescence.*
Horne—*The Philosophy of Education.*
Hinsdale—*The Art of Study.*
Hill—*Introduction to Vocational Education.*
Inglis—*Principles of Secondary Education.*
Johnson—*The Teaching of History.*
Judd—*The Psychology of High School Studies.*
Judd—*Speaking and Writing English.*
Johnston and Others—*The Modern High School.*
Johnson—*Administration and Supervision in Secondary Schools.*
King—*The High School Age.*
Kornhauser—*How to Study.*
Krause—*The Direct Method in Modern Languages.*
Knox—*Personal Efficiency.*
Mackie—*Education During Adolescence.*
Marigold—*Child Welfare Problems.*
Monroe—*Teaching My Subjects.*
Monroe—*Principles of Secondary Education.*
Moore—*The Parent, Teacher and the School.*
McGregor—*Supervised Study.*
Morehouse—*The Discipline of the School.*
Newlon and Others—*Junior and Senior High School Administration.*
Nennan—*Education for Character.*
Nutt—*Principles of Teaching High School Subjects.*
O'Shea—*The Child, His Nature and His Needs.*
Parker—*The High School.*
Parker—*Methods of Teaching in High School.*
Partridge—*Genetic Philosophy of Education.*
Pearson—*The High School Problem.*
Pillsbury—*Education as the Psychologist Sees It.*
Pringle—*Adolescence and High School Problems.*
Pyle—*Educational Psychology.*
Peckstein and McGregor—*Psychology of the Junior High School Pupil.*
Perry—*Discipline as a School Problem.*
Ruch—*The Improvement of the Written Examination.*
Ruediger—*Principles of Education.*
Robinson—*Mind in the Making.*
Slaughter—*The Adolescent.*
Snedden—*Principles of Secondary Education.*
Snedden—*Problems of Secondary Education.*
Snedden—*The Place of Home Economics in High School.*

Snedden—*Vocational Education.*
Stratton—*Teaching of English in Secondary Schools.*
Simpson—*Supervised Study in History.*
Sandwick—*How to Study.*
Sisson—*Essentials of Character.*
Sachs—*The American High School.*
Strayer—*Educational Procedure.*
Starr—*The Adolescent Period.*
Shuman—*How to Judge a Book.*
Smith—*All the Children of All the People.*
Smith—*Democracy's High School.*
Strayer and Notesworthy—*How to Teach.*
Terman—*Educational Tests and Measurements.*
Thorndike—*Principles of Teaching.*
Thorndike—*Educational Psychology.*
Thomas—*Training for Effective Study.*
Thomas—*Teaching of English in Secondary Schools.*
Tryon—*Teaching History.*
Taffer—*The Music Supervisor.*
Twiss—*Principles of Science Teaching.*
Taylor—*Handbook of Vocational Education.*
Uhl—*The Principles of Secondary Education.*
Ward—*Teaching of English.*
Waples—*Procedures in High School Teaching.*
Woodhull—*Methods of Teaching Science.*
Waite—*Education.*
Whipple—*How to Study Efficiently.*
Wilson and Lull—*The Re-direction of High School Education.*

FUNCTIONS OF THE HIGH SCHOOL

There are many viewpoints as to the function of the high school. A special study of the "High School as a Community Center" was made by Mr. L. B. Rymph, of the University of California Summer Session class, in the course "The Principal and His School". The following outline is a summation of this feature of the function of the high school:

Making the School a Civic Center

The following suggestions were collected in response to an assignment made on the above topic. They are grouped under fourteen general heads. Following each item suggested is a number representing the number of people presenting the suggestion. Tabulation of the suggestions was made by Mr. Rymph.

I. Adult Education

A. Extension.
  1. University lectures. (20)
  2. Motion pictures. (64)
  3. State Dep't Short Course. (5)
  4. County agents demonstrations. (1)

B. Regular night schools.*
  1. Americanization. (32)
  2. Study classes. (11)
  3. Part-time H. S. (1)
  4. Public speaking classes. (3)

C. Home department work. (2)
D. Reading circles. (2)
E. Open shops to adults in evening. (1)
F. Art galleries for community use. (1)
G. Library. (29)
H. Public reading room. (7)
I. Sewing circles. (1)

II. School Facilities Open to Community Organizations

A. Y. M. C. A. and Y. W. C. A. (1)
B. Church and Sunday School. (2)
C. Cafeteria open to use of all organizations. (1)

*No attempt is made to enumerate the various types of classes maintained in evening schools.

D. Professional and business organizations.
   1. Grange programs. (1)
   2. Public installation of lodge officers. (1)
   3. American Legion meetings. (4)
   4. Chamber of commerce. (14)
   5. Farm associations. (10)
   6. Farm center. (14)
   7. Farm bureau. (38)

E. Radio clubs. (6)
F. Women's study and social clubs. (21)
G. P. T. A. activities. (77)* Largest number submitted.
H. League of women voters. (1)
I. Fathers' club. (2)
J. Visiting conventions. (3)
K. Literary societies. (6)
L. Musical organizations. (20)
   1. Band.
   2. Orchestra.
   3. Chorus.

III. Community Recreation

A. Gym.
   1. Adult Athletics. (13)
   2. Gym classes. (8)

B. Public playgrounds. (5)
C. Play-day. (Everyone, old and young.) (10)

IV. Entertainment

A. Recitals. (1)
B. Song fests. (2)
C. Band and orchestra programs. (25)
D. Operettas. (9)
E. Glee clubs. (15)
F. Chorus. (15)
G. Folk dancing. (1)
H. Community singing. (13)
I. Lectures. (68)
J. Movies. (64)
K. Dramatics. (49)
L. Lyceum course. (49)
M. Forensics. (40)
N. Radio concerts. (8)
O. Festivals. (7)
P. Little theater movement. (1)
Q. Racial group programs. (1)
R. Back-to-school night. (1)
S. Old time programs: spelling, cipher-ing, box suppers. (4)
T. Selected programs. (4)
U. Pageants. (25)

V. Community Socials

A. Monthly parents get-together. (5)
B. P. T. A. activities. (77)
C. Card parties. (11)
D. Dances. (34)
E. Community picnics. (12)
F. Community sings. (13)
G. Community parties celebrating new equipment. (1)
H. General informal get-togethers.

VI. Luncheons, Teas, Dinners, Banquets

A. Receptions to noteworthy citizens. (3)
B. Various club luncheons and dinners. (13)
C. Faculty teas. (1)
D. Home economics class dinners to trustees. (1)
E. Father and son celebrations. (12)
F. Mother and daughter. (10)
G. Civic organization luncheons. (25)
H. Afternoon teas. (1)
I. Alumni luncheon. (1)
J. Teachers' and trustees' luncheons. (2)

VII. Community Forums

A. Political meetings. (9)
B. School improvement meetings. (6)
C. Civic improvement discussions. (11)
D. Elections. (15)
E. Community booster meetings. (1)
F. Formal debates. (2)
   1. Citizens vs. citizens.
   2. Students vs. citizens.

VIII. Special Day Observances

A. Mothers' night. (10)
B. Christmas trees. (10)
C. Father and son banquets. (12)
D. May fete. (13)
E. Appropriate holiday celebrations. (18)
F. School visiting day. (33)
G. Alumni evening. (2)
H. Annual kite day. (1)

IX. Public Health

A. Public health community programs. (2)
B. Raise school standards. (1)
C. Red Cross activities, school headquarters. (7)
D. Clinics. (10)
   1. Medical.
   2. Dental.
   3. Baby.

X. School Objectives

A. Interest student in extra-curricular activities. (1)
B. Raise school standards. (1)
C. Development of winning teams. (1)
D. Suit curriculum to community needs. (1)

XI. Within-the-School Events

A. Social events.
   1. School and class parties. (12)
   2. Dances. (25)
   3. Assemblies. (2)
   4. Banquets. (2)
   5. Luncheons. (10)
B. Programs.
   1. Graduating exercises. (9)
   2. Operettas. (20)
   3. Pageants. (25)
   4. Forensic contests. (20)
   5. Children's programs. (3)
   6. Dramatics. (38)
C. Athletics.
   1. Field day .(10)
   2. Athletic events, All participate. (1)
   3. Interschool contest. (3)
   4. Basketball, football, etc. (14)
D. School paper. (6)
E. Beautifying school grounds. (6)
F. Fund-raising entertainments.
   1. School carnival. (4)
   2. Fall fair exhibits. (4)
   3. Fall bazaar. (5)
G. Exhibits.
   1. Fashion show. (1)
   2. Children's pets. (1)
   3. School work. (10)
   4. Shop work. (10)
   5. Home economics demonstrations.
H. Associated school affairs.
   1. Community day. All elementary schools participating.
   2. Neighboring elementary school programs. (1)
   3. Community forensic and music contests. (21)

XII. Boys' and Girls' Work

A. Campfire Girls. (18)
B. Girl Scouts. (18)
C. Girl Reserves. (20)
D. Boy Scouts. (44)
E. Hi-Y. (1)
F. Agricultural clubs. (1)

XIII. Teachers and Administrators in Community Life

A. Teachers and administrators should be members of churches. (1)
B. Teachers must know their community. (1)
C. Principal, a member of civic organizations. (2)
D. Principal should visit homes. (2)
E. Adults should be encouraged to bring problems to teachers. (1)

XIV. Vacation Activities

A. Daily vacation Bible School. (3)
B. Vacation schools. (4)
C. Vacation playgrounds. (5)

XV. Miscellaneous

A. Place of registration of minors. (1)
B. Employment bureau for students and others. (1)
C. Essay awards by service clubs. (1)
D. Spread of school news and propaganda through newspapers. (2)
E. Center for benevolent collections. (3)
F. Principal should keep in close contact with successful graduates. (1)

VITAL PROBLEMS IN SECONDARY EDUCATION

Vital problems in secondary education are those that teachers are meeting regularly in their work. During the past four years more than five hundred teachers and principals have presented problems to me that are herewith submitted:

SELECTED PROBLEMS—METHODS

1. What shall be done with misfits?
2. How can I teach three classes in English, one in mechanical drawing, one in vocational guidance and do justice to assembly and student body singing each week, the glee club and dramatics?
3. How can one sell the school life to the student body in such a way as to cause the students to take more than perfunctory interest?
4. Why do teachers not know something about fatigue and working hours; why does someone not give a course in teaching efficiency, that is, in how to prevent having to work too much and still get results?
5. I have taught for ten years. I correct far less papers than I used to. I demand far less handing in of written work as evidence of home work done by students. I believe that through getting my studetns interested, I do not need such frequent written checks. I have far more time to live like a normal human being, and am fresher at my work than I was five years ago. Most young teachers I meet are shocked at my seemingly care-free attitude. Am I justified?
6. The exceptionally hard-working students, who, however, accomplish nothing.
7. The morally under-standard student, where the teachers have little control along that line.
8. The bringing into line of a child who is uninteresting and uninterested, whose parents are of the same state of mind.
9. How can the high school serve the needs of the backward student without interfering with the progress of the abler type of students?
10. How to correlate mathematics with other secondary school subjects.
11. How to vitalize algebra and geometry and make them up-to-date.
12. How to secure original thinking.
13. How to secure enough interest in mathematical work to bring about the preparation of assigned lessons without using tests, examinations, and oral quizzes as part of the daily work.
14. How to teach algebra and geometry so that they may be of use to all instead of to the few who enter college. (How make them function in every day affairs of life.)
15. Interesting in their courses those students who come for athletics only.
16. How to develop observation and skill in preference to memory.
17. How to broaden the field and give opportunity for imagination and creative ability.
18. How to substitute for passive interest, the spirit of search and inquiry.
19. How to motivate the naturally disinterested boy or girl.
20. Is it in keeping with the purpose of the public school to expel the habitual "flunkers" in our present system?
21. How to make commercial pupils and commercial teachers realize that the business world is not a world of clerkships, but a field which calls for the highest quality of training—academic and professional.
22. Classroom procedure.
23. The average high school student accomplishes only about one-half as much as he should. How is it possible to make him realize that he is capable of accomplishing much more than he does?
24. "I teach in a part-time high school; I have ten classes per week of two hours each, 25 to 30 in a class—say 250 different boys. The pupil 'turn-over' is about 75% of that number per year. Ages range from 15-18. The 'leaving-full-time-

school grade' is from 6b to third year high school. Mentality ranges from border-line to gifted. Each group is heterogeneous. The degree of progress in the subject (mechanical drawing) ranges from none to three years in the high school. Such a group presents a number of problems:

"a. What should be done to get them classified, remembering that the employer's wishes must be complied with?

"b. To what extent should class instruction be followed?

"c. To what extent should group instruction be followed?

"d. What should be done with the 25% who are intellectually and temperamentally unfit to take the subject?

"e. Is the customary high school course in mechanical drawing the one to teach such a group?

"f. Should the teacher endeavor to make all the pupils take the course?

"g. Why try to teach them mechanical drawing anyway, a subject that requires no small degree of practice in making muscular adjustments?

"h. Should the pupils buy their own instruments, or should the school furnish them? If the latter, just what instruments and how many would be issued? How would they be issued?—kept on the desks, or checked in and out by a pupil monitor?"

25. How to retain in school boys of a non-mental type, particularly through the ninth and tenth years, should they be retained?
26. To apply the junior high school idea to the small high school district.
27. Successful teaching of a large class without using the lecture method.
28. So arranging and obtaining repair jobs that the boys will attain skill in the use of all the tools deemed fundamental to the farm shop.
29. Getting the boys to help in the construction of farm shop buildings without giving the impression to the community, students and parents that the boys are being exploited or overworked.
30. Handling the tools of the shop in such a way that the smallest number will be lost and the least amount of time used in keeping track of them.
31. How to develop a spirit of co-operation among students who have been used to "cliqueness", but not to initiative and team work in student affairs.
32. How to deal with freshmen who enter high school with hardly a working knowledge of the English language.
33. Physical education—too many doctor's excuses from P. E.
34. Correlative of home economic work in elementary and secondary schools when they are not in the same district under the same supervision.
35. How to teach history to foreign children with an English vocabulary so limited that they cannot comprehend the school texts.
36. How can the public speaking teacher meet the school demand for presentation of plays, oratorical contests, debates, and literary societies besides her regular classes?
37. Articulation of high school English with grade work.
38. A plan to teach first and second year classes when just one period is allowed for the work.
39. In the high school course of two or three years in French, should the teacher emphasize fluency in speech or facility in reading?
40. What is the function of the nutrition staff in the high school? its responsibilities? its limitations?
41. What would you do with the student who had taken chemistry for two semesters, and not grasped it at all? His intelligence test shows an I. Q. of 60. Yet, he must have science to graduate.
42. What should be the basis for grading—the work handed in, or the measure in which the student is doing the best of which he is capable?
43. To get pupils to have a real desire to speak and write correctly.
44. How to interest the non-mental type of boy enough for him to acquire the fundamentals.

45. How can I change from class promotions to individual promotions?
46. In what grade to place children of low intelligence, when we have no special class.
47. Where to place children from schools that promote every half year, when conditions make only yearly promotions possible?
48. In a high school of from 200 to 400 pupils, what is the best system by which faculty members may learn to know their pupils intimately and be in a position to advise them? Should every member of the faculty participate in the work and have a certain assigned number of pupils to look after? Or, should there be one boys' advisor and one girls' advisor who could co-ordinate all efforts?
49. How may high school failures be prevented?
50. Is supervised study, i. e., one hour periods with 30 minutes recitation and 30 minutes study period, successful? How can study be made successful and greatest value derived therefrom?
51. What methods can be used to get adults interested in evening classes? Especially foreigners?
52. How can individual instruction be arranged to comply with a set of requirements laid down by the principal of the school?
53. What would you suggest as a remedy for an increasing number of instances in a large high school of pupils who apparently pride themselves in low, though passing, grades gained without great effort? "Getting by" is their boast. These pupils pretend to feel superior to the real students though the latter are not digs but leaders in extra-curricular activities as well. Is it merely affectation? A phase of adolescence?
54. Given: a. Two divisions in each room; b. Pupils ranging from very low mentality to high mentality. How shall a teacher give instruction best suited to all?
55. What shall a teacher with two grades in her room do with regard to courses of study? Follow course of each grade splitting time like an ungraded school, or amalgamate classes and use course for higher division?
56. In an intermediate school of 400 pupils, would you organize a distinct class for the morons?
57. How link up the commercial department with social activities.
58. What should you do with pupils who enter high school without foundation work in grammar?
59. What should you do with the student who is lazy and shirks the daily lessons?
60. What to do in each of the following cases: with the pupil who is absent too much? always hands in his work late? is in school because of the compulsory education law? is exceptionally bright? is discouraged? is working for speed instead of accuracy? is a cigarette smoker?
61. How can you develop a system of corrective work for both elementary and high school?
62. How can we be certain that home project work is being done?
63. How can we interest teachers in project work when they are not interested?
64. Is it possible to use project work in all departments? What is the difference between the project method and the problem method?
65. How can you get pupils interested so that they will do research work for themselves?
66. How can you arrange for outside reading when you are in a small school and have no library facilities? (This is equal to the question, How can you get books from a great library when all of the hundreds want the same book?)
67. How can you make supplementary reports made by individual pupils of value to the whole class?
68. What are some of the ways to vary the presentation of a subject?
69. How consider the student who is prepared for vocational work and later decides to enter the university?
70. How can you apportion laboratory work so that those who work the fastest will not have a lot of time left over?
71. How can history be made attractive to the boy who thinks he cannot get it?

THE FORUM
COMMENT AND CRITICISM

John Fiske once said that the best sign of progress in any line of human endeavor is a healthy discussion. These columns open to you that opportunity.

Heads of Departments of Commerce, Los Angeles High Schools, say that criticism of Commercial Education in California, by Mr. Earl W. Barnhart in the Report of the Committee of Fifteen, are "unjust and untimely." Their communication is dated July 9, 1925, and follows:

At the last monthly meeting of the heads of commercial departments of the Los Angeles high schools, we discussed the attack on commercial education appearing on pages nine and ten, Bulletin No. 1 of California Society for the Study of Secondary Education. The attack to which we refer appears as a quotation from a report which Mr. Earl W. Barnhart made in 1923 for the Committee of Fifteen, and your comments upon his report, and is in part as follows:

"In the conclusion of his report on commercial education in California, Mr. Barnhart says:

" 'This survey has not obtained enough facts to indicate just how efficiently commercial education in California secondary schools is functioning. The survey has revealed that there is no agreement as to purpose, no knowledge as to what is needed, no method of testing the efficiency of the work done, and no leadership or guidance for improving that part of the secondary school program which reaches practically half of the pupils and all of the employers of office and store help. . . .'

"While Mr. Barnhart admits that the work done in California is as good as the best done in the United States, he presents a staggering indictment against our present educational program. . . ."

These are very sweeping statements, and since they are unqualified, they are evidently meant to apply to every school and city in the State. Being responsible for commercial education in the larger high schools of Los Angeles, we consider it our duty to answer these charges against commercial education lest by not doing so more might think we admit them to be true. The charges are four in number, and we shall discuss them separately.

"No Agreement as to Purpose"

During the year just closing the commercial teachers and heads of departments have completely revised the Commercial Course of Study Monograph. In this monograph the purpose of each commercial subject was carefully analyzed and the objectives to be attained painstakingly worked out and stated. Suggestions for teaching each subject were made, a weekly outline provided, and a comprehensive bibliography presented. After each committee completed its special task, the whole monograph was discussed by a Course of Study Committee consisting of representatives from each school and it was adopted without a dissenting vote. This monograph is now in the hands of the printer and when completed will consist of a book of several hundred pages.

We have had many meetings during the year to discuss needs of commercial education. Among these may be mentioned meetings of teachers of special subjects, Los Angeles City Commercial Teachers' Association meetings, and meetings of the Southern California Commercial Teachers' Association. In addition to these meet-

ings the Los Angeles City Association of Heads of Department of Commerce held monthly conferences with the supervisor of commercial education, at which ways and means of meeting the demands of modern business education were discussed and plans of execution decided upon.

"No Knowledge as to What Is Needed"

Last year the commercial teachers of Los Angeles conducted a very extensive occupational survey, in the course of which business houses were visited, employers searchingly interviewed, and employees asked to fill out a very comprehensive questionnaire. About fifteen hundred of these questionnaires were collected, the results tabulated, and our subsequent courses have been planned to meet the needs as evidenced by this survey.

During the year just closed the commerce teachers have had several meetings with the managerial personnel of such organizations as Bullock's Department Store and the Broadway Department Store, where the preparation of the commerce student for his place in the business world has been discussed in detail.

Both teachers, heads of departments, and supervisor make frequent visits of inspection to business houses of the city.

"No Method of Testing the Efficiency of the Work Done"

During the past five years the Los Angeles city schools have carefully supervised and conducted contests in typewriting in the city schools in an effort to determine accurately the results obtained by different methods of teaching the subject, as well as to determine the relative merits of the one-period-per-day versus the two-period-per-day plan. A typewriting contest is also conducted annually between the schools of Southern California, and two years ago we added to these contests competition in shorthand transcriptions to determine the merits of earlier or later beginning of speed practice. This year a contest in the essentials in bookkeeping as practiced under ordinary working conditions in the business office was added.

Advertising classes in most of our high schools are actively engaged each week in writing the "copy" which is used and paid for at "space" rates in the school newspapers by the merchants and professional men of the city. This is done as project work and it enables the student to measure his ability in terms of dollars and cents in actual competition with the professional. Actual store selling is also being done for pay in the downtown stores by the members of the classes in salesmanship—another very definite way of testing the efficiency of classroom theory.

Consistent follow-up work is also being done so that we may determine the efficiency of our work after the student leaves us.

"No Leadership or Guidance"

Los Angeles has a full-time supervisor of commercial education who devotes his time to keeping constantly in touch with the changing needs of the business world, helping to plan the course of study, and supervising actual classroom teaching. Once a month the heads of department of commerce meet with the supervisor to discuss betterment and local problems, as well as matters of state and national importance in connection with modern and efficient commercial education.

We have also a full-time supervisor of salesmanship and advertising. She also is one who has had much practical experience and who is, therefore, well qualified to judge as to what is needed in these courses.

Penmanship is carefully supervised in the grades.

Courses of study are annually revised to meet changing conditions in the business world.

In view of these facts we resent the unqualified statements which appeared in the article referred to as being unjust and untimely when considered in the light of what we are doing and have been doing in the effort to provide efficient business training for the boys and girls of Los Angeles.

By ALBERT E. BULLOCK,
Supervisor.

AEB.PW

RESOLUTIONS OF CONFERENCES ON SCIENCE TEACHING

The Northern California Science Teachers' Conference held a meeting at Berkeley in July, and the Southern Conference was held in Los Angeles in August. The resolutions passed by both conferences are significant.

Resolutions of Northern Conference

1. There is considerable confusion throughout the state in regard to the desirable sequence of the science courses. After considering the tendency in the state and throughout the country, the conference recommends that general science be offered by the junior high schools in the seventh grade and in at least one other year. In the four year high schools, general science is recommended for the ninth grade. Biology should be given in the tenth grade. It is recommended by the conference that a life science be required of all students in the tenth grade. Chemistry and physics should be offered in the eleventh and twelfth grades. While there seems to be a greater tendency to take chemistry in the eleventh and physics in the twelfth, there is not sufficient reason to limit choice in the order of these sciences.

2. There is great need for a definition by the College Entrance Board of the subject of physiology as an advanced science for the third or fourth year of high school.

3. It is recommended that the University offer two elementary courses in each science, one for those who have had high school work in that subject and the other for beginners.

4. Many teachers are required to teach science without adequate preparation, and many teachers prepared in science are required to teach other subjects. From 5% to 50% of the teaching staffs of the different high schools of California teach some science, and 47% of the trained science teachers are teaching also other subjects in the curriculum. The conference urges increased attention on the part of high school principals to the assignment of teachers to subjects in which they are properly prepared.

5. General science and biology constitute a large part of the science in the high schools of the State. Teachers of these subjects have not all had proper training. There is distinct need of help from the University in the form of training in subject matter used in the two subjects mentioned. The conference requests the University to provide adequate preparation, such preparation to include courses from the following fields of science: chemistry, physics, botany, zoology, physiology, biology, bacteriology, public health and nutrition. (There was a general feeling that earth science should also be included.)

6. In order that science teachers might be better able to realize the possibilities of science in training of young people to meet the problems of modern life, it is recommended that an extensive and thorough study (experimental) be made of the science training needed by the individual living in modern society, the selection and organization of subject matter, and the choice of methods to be used in order to realize these desired ends.

7. It is recommended that the Commissioner of Secondary Education of California provide a clearing house for laboratory plans, specifications for laboratory furniture, equipment and standard lists of supplies for each of the courses now commonly given in the secondary schools of the State. Copies of such material to be available to all science teachers who desire them.

Resolutions of Southern Conference

The resolutions adopted by the Southern Conference are in substantial accord with those passed by the Northern Conference, with the following significant additions:

(a) "It is recommended to the State Board of Education that the high school credential enumerate the subjects in which the teacher has had special training."

(b) "It is recommended that general science be *required* for one full year in the junior high school or for the ninth year in the four year high school, and that *biology be required* of all students in the tenth grade of the high school."

(c) "It is recommended that physics teachers reduce the mathematical content of high school physics as far as consistent and make a greater effort to popularize the subject. We also recommend that engineering students should be segregated where possible."

(d) That the Conference on Science Teaching . . . "most heartily commend the Board of Education of the State of California on their recent broad minded stand in regard to certain textbooks which discuss the theory of evolution, and that we urge upon them in the future the utmost importance of continuing to foster an unhampered search for truth."

SPECIAL METHODS IN SPANISH

If my experiments in teaching Spanish will be of any help to others, I am glad to describe them.

Briefly, we began using a five-day assignment plan last January in all Spanish classes of the Frances Willard Junior High School.

Every Friday, at close of periods, each teacher assigns what would be the usual five-days' work. This gives chance for ambitious students, over week end, to scan, or "scout" as we call it, the next week's material.

MONDAY: Teacher spends entire period outlining the week's work. (No recitations; all listen quietly, and take notes for intensive study and "partnership study".)

TUESDAYS: Pupils select partners, in same "level" and study out loud, entire period, marking progress, by signals on graphs.

WEDNESDAY: Larger groups formed in each corner of school room, or even go out to empty rooms, select a "faculty" of two of their number to conduct quizzes and *"call-board"* try outs.

THURSDAY: Entire class assembles about teacher as compactly as possible, and the main "call-board" is used to hear recitations, and give grades, teacher supervising.

Penalties, rewards, positions on the "faculty" and other leadership-openings create interest from the best to lowest student, and various "graphs" made by the children themselves give a more accurate and satisfactory record of effort than we have ever had.

Thursday generally closes with five days covered by a larger number of pupils and, more satisfactorily, than we used to do in the whole week.

The result is we have an extra day for games, "picture-talks by students", and all sorts of projects. The greatest enthusiasm prevails *on FRIDAYS*.

We have no more inattention, no more sleepy people. Having three levels (slightly on the order of the Eureka idea of classification), everybody in a class is satisfied that his grades are as nearly accurate as could be secured.

Of course, all talk at the same time on Tuesdays and Wednesdays, but they never seem to be bothered more than telegraph operators in a room with twenty-five machines ticking at the same time, or any other kind of operative who becomes accustomed to necessary noise.

Teachers, too, become inured or impervious to the noise, realizing that the pupils have objectives and are accomplishing definite work in a difficult subject.

Mondays and Thursdays, however, are different, and only the voices of the teacher and the one reciting are heard.

C. D. CHAMBERLAIN.

Frances E. Willard Junior High School, Santa Ana.

A SELECTED AND ANNOTATED BIBLIOGRAPHY ON PROFESSIONAL BOOKS IN EDUCATION

FOR PRINCIPALS AND TEACHERS OF SECONDARY SCHOOLS

Prepared by

FRANK C. TOUTON

Professor of Education, University of Southern California

With the assistance of directors of teacher training courses and graduate students in Education.

ACKNOWLEDGMENT

In the selection of this bibliography the writer had the able assistance of those directing the courses for teachers in the University of Southern California and in the University of California. The descriptions were made possible through committee reports of several hundred graduate students in classes directed by the writer in both of the above institutions. The entire list has been revised during this summer, 1925, at the University of Southern California, with the assistance of a group of ninety heads of high school departments enrolled in a course entitled "Problems in Departmental Organization and Administration in Secondary Schools." Without the assistance given by these teachers and students of Education, this extended bibliography would not have been possible.

—FRANK C. TOUTON.

To Principals and Teachers:

1. You have here a carefully selected and annotated bibliography of professional books in Secondary Education. It has been revised and is reprinted from the Report of the Committee of Fifteen for the purpose of giving you in the first number of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION a finding list to which you may constantly refer.

2. Scan the lists to see how many of these books are in the professional library of your school.

3. Critically examine the lists to determine what books you think should be in the professional library of your school, not now there, and make requisition to the proper authorities for such books.

   In the December number of THE QUARTERLY, Dr. Touton will submit a list of carefully selected tests adapted to secondary schools.

—EDITOR'S NOTE.

BOOKS RECOMMENDED FOR THE PROFESSIONAL LIBRARY OF A PRINCIPAL OF A SECONDARY SCHOOL

1. School Statistics and Publicity: 316 pages. Author: Carter Alexander, Peabody College for Teachers. Publisher: Silver Burdett and Co. Published: 1919. Cost $1.88. Written for: School principals and superintendents interested in presenting educational data to the public in an effective way.

Special contribution: Gives an exceptionally clear treatment of methods to be used in tabular and graphical presentation of facts. Topics treated: Why we need better school statistics; Collection of data; Technical methods needed; Measures of central tendency, dispersion and relationship; Good and bad methods of tabular and graphic presentation of educational data; Translation of statistical material for the public.

2. Publicity Campaigns for Better School Support: 164 pages. Carter Alexander, Ass't. Supt. Public Instr. in Wis.; and W. W. Theisen, Board of Education, Cleveland, Ohio. World Book Company. 1921. $1.20. Written for: Superintendents and principals.

Special contribution: Includes methods for conducting campaigns for raising money for school purposes, including organization of staff, material, preparation of material and examples of successful campaigns. Topics treated: Are publicity campaigns for better school support advisable? The campaign staff; Groups to be reached by the campaign; Avenues and instruments of approach to the public; How to select arguments and illustrations; How to prepare and circulate material for effective publicity; The campaign under way; Examples of good publicity material used in successful campaigns for better school support.

3. Problems of the Teaching Profession: 340 pages. John C. Almack, Stanford University, and Albert R. Lang, State Teachers College, Washington. Houghton, Mifflin Co. 1925. $1.90. Written for: Educators and students of education.

Special contribution: Deals especially with teaching as a profession. Topics of present-day interest are: Selection of teachers; Ethics of the profession; Ethical codes; Teacher participation; Teachers' loads, tenure, and salaries.

4. Classroom Management: 322 pages. William Chandler Bagley, Teachers College, Columbia University. Macmillan Company. 1921. $1.60. Written for: Students of education in universities, training schools, and normal schools who are preparing for classroom teaching, especially in elementary grades.

Special contribution: Valid principles of teaching are derived from observation and induction based upon successful school practice. Topics treated: The book is divided into two parts, first, treating the "Routine Factors of Classroom Management" and second, "Judgment Factors in Classroom Management." These major headings are subdivided into chapter headings of—Routine and Habit; Initiation routine; Mechanizing routine; The daily program; Regularity and punctuality of attendance; Preserving hygienic conditions in the classroom; Order and discipline; Penalties, and the problem of attention; The Technique of class instruction; The "Batavia System" of individual instruction; Testing results; The disposition of the teacher's time; The relation of teacher to principal; Supervisors and superintendents; The ethics of school craft.

5. School Discipline: 252 pages. William Chandler Bagley. Macmillan Company. 1914. $1.80. Written for: Young and inexperienced teachers.

Special contribution: Gives a critical analysis of many concrete school situations in which the problem of

discipline actually arose. Topics treated: What is meant by a well-disciplined school; The unruly school; Transforming the unruly school; Coercion through rewards and penalties; Corporal punishment; Troublesome types; Discipline and the doctrine of interest.

6. High School Organization: 178 pages. Frank W. Ballou, Supt. Washington, D. C. World Book Company. 1914. $2.00. Written for: Administrative officers of New York City schools but valuable in a high degree to officers of any high school system.

Special contribution: Contains a concise valuable summary and recommendations on the findings from the study of the subjects listed below. Topics treated: Size of classes in high schools; The work of chairmen or heads of departments; The work of other teachers; Administrative control of the high school as it affects internal organization; Estimating the number of teachers needed.

7. The Community and Its High School: 371 pages. Author: Paul E. Belting, University of Illinois. Publisher: D. C. Heath & Co. 1924. $1.80. Written for: Students of Education and teachers.

Special contribution: Presents the effective ways in which the High School may provide for the transmission of the desirable results of important changes in society. Topics treated: The Community and its High School; The School Board; The chief executive officer; The High School principal and the teacher; The High School principal; The dean of girls; Means of improving educational and professional position of teachers in service; High School records; High School marks; Ways of learning and their implication; Pupil participation and co-operation in High School control; High School discipline; Extra-curricular activities; Significance of the practical arts; Physical education; The development of High School spirit as a factor in supervision; Morality as a purpose of Secondary Education.

8. The Junior High School: 208 pages. G. Vernon Bennett. Warwick and York. 1919. $1.50. Written for: Those interested in understanding the junior high school movement.

Special contribution: Treats problems for which the junior high is suggested solution. Topics treated: The history of the movement; The answer to objections; Its effect upon the elementary grades; Courses of study; Principal and teachers; Teaching problems; Administration; Relation to senior high and junior college; Summary.

9. Psychology and Self-Development: Henry Eastman Bennett, College of William and Mary. Ginn and Company. 1924. $1.48. Written for: Secondary school principals.

Special contribution: Contains material of practical helpfulness enabling the student, teacher, or independent reader to pursue a thorough first course in college psychology as a project in the development of his own mind.

10. School Efficiency: 374 pages. Henry Eastman Bennett, College of William and Mary. Ginn and Company. 1917. $1.48. Written for: All teachers, principals especially.

Special contribution: A general survey and summary of the fundamentals of efficient teaching in the schools of America. Topics treated: Efficiency in management; School grounds; Buildings, light, heat, etc.; Health; Course of study; Organization; Promotions; Marks; Reports; Daily schedule; Home study; Routine; Eliminating waste; Work and drudgery; Punishment; Government—constructive and corrective; Community cooperation; School extension; Teachers' rights and duties; Self-management.

11. The Recitation: 120 pages. George Herbert Betts, Northwestern University. Houghton Mifflin Co. 1911. $1.20. Written for: All teachers in elementary or secondary schools.

Special contribution: The fundamental principles underlying the conduct of a successful recitation. Topics treated: Purposes of the recitation; Method of the recitation; The art of questioning; Conditions necessary to a good recitation; The assignment of the lesson.

12. Youth, School and Vocation: 273 pages. Meyer Bloomfield, Boston University. Houghton, Mifflin Company. 1915. $2.00. Written for: Those who have come into the sense of the full social duty of the school.

Special contribution: The treatise gives a comprehensive outline and discussion of vocational guidance in England and Germany. Topics treated: Choice of life work and the difficulties involved; The wasteful start in the choices made by children; Causes for leaving school and follow-up of childrens' activities after leaving school; Educational and vocational guidance; A short history of vocational guidance and the policies of the Vocation Bureau of Boston; The organization of vocational guidance; Samples of different existing organizations; Vocational guidance in Germany; Vocational guidance in England; Relation of health to vocational choice and the requirements of certain choices on the physique; Relation of the school and the policy toward vocational guidance; Contributions of vocational guidance toward a better social environment and the ideals of vocational guidance; Concrete suggestive material on the collection of data concerning vocational guidance.

13. Paths to Success: 304 pages. Harold Garnet Black, Hollywood High School. D. C. Heath and Co. 1925. $1.40. Written for: Teachers and pupils in the secondary schools.

Special contribution: Sixteen interesting essays by experts in the various fields, discussing the secondary subjects. Topics treated: Education (Introduction) by the author; Latin by Dean West, Princeton University; History by Professor Breasted, University of Chicago; Physics by Professor Millikan, California School of Technology; Vocations by Professor Snedden, Teachers College, Columbia University, etc.

14. How to Make a Curriculum: 292 pages. Franklin Bobbitt, Univ. of Chicago. Houghton Mifflin. 1924. $1.80. Written for: School administrators, supervisors, department heads and teachers in cities where the revision of the course of study is contemplated.

Special contribution: Gives suggestions for making a preliminary survey, details the major objectives of education, and of the various subjects of study, indicates pupil activities and experiences, and develops the fact that the making of curricula is co-operative study and co-operative action.

15. Fundamentals of Education: 245 pages. Boyd H. Bode, Ohio State University. Macmillan Company. 1922. $1.40. Written for: Teachers.

Special contribution: Presents the ideals of education and the nature of the mind. Topics treated: Meaning of education; Educational values; Education and democracy; The development of ideals; Interest, duty and effort; The process of thinking; Training in thinking; The transfer of training; The Soul-substance theory, etc.

16. The Intelligence of High School Seniors: 371 pages. Wm. F. Book, University of Indiana. Macmillan Co. 1922. $2.40. Written for: Educators, laymen and social workers.

Special contribution: The abilities of the most gifted of each generation should be conserved and carefully cultivated. Topics treated: Purpose; Method and scope of the Indiana Senior High School survey; Results; Intelligence of seniors going to college; Seniors not going to college; Intelligence of different occupational groups, going into different careers, preferring different high school subjects; Conclusions; High schools not doing their business; Reforms needed; Value of intelligence tests; Need for more cooperative and humanistic research in humanistic sciences.

17. Teaching to Think: 284 pages. Julius Boraas, St. Olaf College, Minn. Macmillan Company. 1922. $1.60. Written for: Classroom teachers of high and elementary schools.

Special contribution: Practical plans for training pupils in the principal types of thinking. Topics treated: Types of thinking; Development of individual judgment; Value and development of cooperative thinking; Development of initiative thinking; Development of imaginative thinking; Development of skill in problem solving; Development of skill in critical thinking; Vocabulary as a means of measuring thinking ability; Mental alertness in thinking; Methods of improving a teacher's efficiency in thinking.

18. The Junior High School: 348 pages. T. H. Briggs, Columbia University. Houghton, Mifflin Co. 1920. $2.00. Written for: Educators interested in a survey of the early progress of Junior High School.

Special contribution: Reviews conflicting claims; presents a comprehensive survey of Junior High School curricula; schedule; School organization; costs and results.

19. New Type Examinations in the High Schools: 118 pages. Sterling G. Brinkley, Columbia University. Columbia University Press. 1924. $1.25. Written for: High School teachers with special reference to history.

Special contribution: Gives the results of a study made to determine the validity and reliability of the new type tests as compared with the old type. Gives a discussion of the merits of each of the types of new tests with examples of each type of test.

20. Supervision and the Improvement of Teaching: 502 pages. W. H. Burton, State Teachers College, Winona, Minn. D. Appleton & Co. 1923. $2.25. Written for: Elementary school supervisors.

Special contribution: Contains a wealth of quoted and critically analyzed material drawn from many sources and bearing directly on the problem of supervision. Topics treated: Value and problems of supervision; The supervisor and improvement in teaching; Function of the supervisor in selecting subject matter, in adjusting content and methods to individual differences of pupils, in improving teachers while in service, in rating teachers; Supervisor as a personality in visitation and conferences with teachers.

21. Problems in State High School Finances: 214 pages. Julian E. Butterworth, University of Wyoming. World Book Company. 1918. $1.20. Written for: Administrators, officials of public school systems; Principals and high school supervisors.

Special contribution: Scientific treatment of financial problems of high school administration. Topics treated: Historical statement and outlines of problem; Support of secondary education without special state aid; Special State aid for general high school purposes; County funds as a supplementary source of revenue for secondary education; Some phases of State supervision of public high schools; Stimulating and measuring the effort of local communities; Free high school privileges; Special State aid for special high school courses and for high school libraries and laboratories; The sources and forms of state high school funds.

22. Principles of Education: 630 pages. J. Crosby Chapman and George S. Counts, Yale University. Houghton, Mifflin Co. 1924. $2.75. Written for: Students of theory, function, and methods employed in secondary education.

Special contribution: Place of education in individual social life; The psychological and sociological foundation of education and principles governing the conduct of the school.

23. Curriculum Making in Secondary Schools: 517 pages. John Addison Clement, Northwestern University. Henry Holt and Co. 1923. $2.00. Written for: Secondary school teachers.

Special contribution: Gives briefly a general survey of modern tenden-

cies in curriculum making. Topics treated: Relation between educational theory and practice; Relation between secondary school objectives and curriculum making; Beginning of curriculum making; Use of tests; Mental differences; Curricula of European school during 19th Century; Curricula of American school during 19th Century; Curricula of junior high school; Curricula of junior college; Criteria to be used; Reconstructed English, history, natural science; mathematics, foreign language, practical and fine arts, subject matter in physical education; Organization and direction of extra-curricular activities.

24. Learning to be a Schoolmaster: 60 pages. Thomas R. Cole, Supt. of Schools, Seattle, Washington. Macmillan Company. 1922. 60c. Written for: Beginning teachers, especially the rural teacher.

Special contribution: Unfolds clearly the guiding principles of education and the needs in rural districts. Topics treated: Entering the teaching profession; Getting a position; School activities; Teachers' meetings; How the principal can help the teacher; School and community.

25. An Introduction to High School Teaching: 414 pages. Stephen Sheldon Colvin, Teachers College, Columbia University. Macmillan Co. 1922. $2.00. Written for: Those young men and women who are soon to enter upon the work of high school teachers.

Special contribution: Practical discussion based on concrete illustrations of the actual problems met in the classroom with suggestions for solution, especially in regard to discipline and methods. Topics treated: General discussion of high school values and ideals; Professional standards for the teacher; Discipline; General and special methods and the elimination of waste in the classroom.

26. The Learning Process: 329 pages. Stephen Sheldon Colvin, University of Illinois. Macmillan Co. 1914. $1.90. Written for: Teachers and student-teachers, elementary and secondary grades and those interested in mature students.

Special contribution: Practical application of the laws of learning to the education of pupils in elementary and secondary schools to save time and effort, and develop pupils through education to their highest efficiency. Topics treated: Fundamental elements in the learning process; Educability of instincts and habits; General characteristics of imagination; Application of the general laws of association; Attention; Memory; Interest; The transfer of training; The higher thought processes; Logical thinking; Educational problems of rational thinking.

27. Selective Character of American Secondary Education: 156 pages. G. S. Counts, Yale University. University of Chicago Press. 1922. $1.50. Written for: Students of Secondary Education.

Special contribution: Gives a statistical analysis of the secondary school population. Topics treated: Parental occupation in its relation to Classification, Enrollment, Progress, Course of Study, and probable employment of pupils; The public high school in relation to cultural level, Family Influences, Immigrant, Negro; Psychological selection in private secondary school population.

28. Curriculum Adjustment in the Secondary School: 306 pages. Philip W. L. Cox, New York University. J. B. Lippincott Co. 1925. $2.10. Written for: All interested in a careful study of the curriculum of the secondary school.

Topics treated: The aims of the secondary school; Consideration of the scientific method in education; High school students and the purpose of the curriculum; Educational experiments under way; secondary school curriculum adjustments.

29. Public Education in the United States: 517 pages. Ellwood P. Cubberley, Leland Stanford University, Houghton Mifflin Co. 1919. $2.40. Written for: All teachers.

Special contribution: Places educational service in its proper setting

as a great national institution evolved by democracy to help it solve its many problems. Shows relation between different institutions of society engaged in educational service. Topics treated: European background; The beginning of American education; Early national and state attitudes; Influences tending to awaken educational consciousness; Battle for free state schools; Battle to control the system; Battle to extend system; Character of schools established; New ideas from abroad; Reorganization of elementary education; New educational conceptions and extensions; Desirable educational reorganization; Fundamental principles and problems.

30. The Principal and His School: 566 pages. Ellwood P. Cubberley, Leland Stanford University. Houghton Mifflin Co. 1923. $2.40. Written for: Principals of elementary schools.

Special contribution: Deals with problems of organization and administration of grade schools. Gives special training in this field and contains much information that beginning principals and older ones will find useful. Topics treated: Type forms of administrative organization; The principal and the principalship; General nature of principal's work; Preliminary conference and organization; First day of school; Drills, fire and line; Yard and building; Crowded building problem; Program making; Business organization and administration; School janitor and his work; Health and sanitary control; Attendance, discipline and control of pupils; The teacher and government; Building up a school spirit; Assembly period; Knowing the school; Classifying and promoting pupils; Obtaining results from the course of study; Special teachers and their work; Planning the supervision; Helping the teacher; Measuring instruction: Making the teachers' meetings profitable; Extra school activities; The parent-teachers' association; The principal as a leader in his profession.

31. Junior High School Education: 462 pages. Author: Calvin O. Davis, University of Michigan. Publisher: World Book Company. Published: 1924. $2.20. Written for: Students of education and for Junior High School administrators and teachers.

Special contribution: Traces the historical development of the Junior High School, gives the aims, discusses the nature of the adolescent, gives various courses of study for comparison, has valuable chapters on administration, collateral activities and on buildings. Contains many quotations and reported experiences of educators in the Junior High School field.

32. Democracy and Education: 418 pages. John Dewey, Columbia University. Macmillan Co. 1916. $2.25. Written for: Teachers, principals and students of education.

Special contribution: An endeavor has been made to detect and state the ideas implied in a democratic society and show their application to the problems of education. Topics treated: Education as a necessity of life; as a social function; as direction; as growth; as preparation; as formal discipline; as conservative and progressive; Democratic conception in education; Natural development and social efficiency as aims; Interest and discipline; Experience and thinking in education; Nature of method and subject matter; Play and work in the curriculum; Significance of various subjects in the course of study; Educational values; Labor and leisure; Intellectual and practical studies; Physical and social studies; The individual and the world; Vocational aspects of education; Philosophy of education; Theories of knowledge—of morals.

33. How We Think: 224 pages. John Dewey, Columbia University. D. C. Heath and Company. 1910. $1.40. Written for: Teachers, primarily.

Special contribution: Discussion on the native attitude of childhood being very near to the attitude of the scientific mind. Topics treated: Definition and need for thought train-

ing; Logical considerations, such as systematic inference; Judgment as interpretations of facts; Concrete and abstract thinking; Empirical and scientific thinking; The training of thought by activity, language, observation and recitation.

34. Bibliography of Educational and Psychological Tests and Measurements: 233 pages. Doherty, Margaret and MacLatchy, Josephine. Department of the Interior, Bureau of Education Bulletin 1923: No. 55. Washington Government Printing Office. 1923. $0.25.

35. The Will-Temperament and Its Testing: 339 pages. June E. Downey, University of Wyoming. World Book Company. 1924. $2.16. Written for: Students of education.

Special contribution: Discusses will-temperament as a factor of personality and summarizes the author's work in measuring temperamental traits. It includes comments on the tests and their practical value, showing how the test results may be used in judging many qualities most important for success in life.

36. Industrial Arts and Prevocational Education in Junior High Schools: 104 pages. A. H. Edgerton, Indiana University. Bruce Publishing Co. 1922. 80c. Written for: Teachers and principals interested in the prevocational aspects of the Junior high school curriculum.

Special contribution: On the basis of an extensive investigation, the author shows an increasing need for a scientific determination of the desirable modifications of the content and method of administering the junior high school prevocational curriculum. Topics treated: Present day needs; Industrial experiences as a means of general education; Types of junior high school industrial arts activities; Improved method in many industrial arts courses; Organizing and conducting representative activities; Value of clear cut objectives; Try-out courses; Methods of offering courses and projects; Problems respecting individual differences; Successfully tried unit-courses; Suggested types of industrial arts, projects and problems.

37. Teaching Children to Study: 182 pages. Lida B. Earhart, Teachers College, Columbia University. Houghton Mifflin Co. 1909. $1.20. Written for: All teachers who are interested in the problems of training children to think independently and the methods by which this independent thinking may be accomplished and strengthened as a personal power.

Special contribution: An able treatment of the methods and procedure of teaching children how to think, how to direct their own conduct intelligently, and how to study with decreasing dependence upon the teacher. Topics treated: The nature of logical study; The nature of inductive study; The nature of deductive study; The relation of rational study to textbook study; Do children possess the ability to study logically? Are children taught to study logically? Can children be taught to study logically? Suggestions for training children to study.

38. Moral Education in School and Home: 311 pages. J. O. Engleman, Superintendent of Schools, Decatur, Illinois. Benj. H. Sanborn & Co. 1920. $1.25. Written for: Educators interested in analyzing possibilities for moral instruction and training in secondary school activities.

Special contribution: A long experience of writer provides proper background for adequate treatment of problems considered. Topics treated: Educational ideal; Psychology of moral education; Moral training through personality of teacher, school discipline, reading, literature, history, biography, music, art, science, manual training, sex instruction, Boy Scouting, motion picture, the Bible, etc.

39. The Administration of Village and Consolidated Schools: 283 pages. Finney (Univ. of Minn.) and Schafer (N. Dak. H. S. Inspector). Macmillan

Co. 1920. $1.80. Written for: Principals of small schools.

Special contribution: Information concerning practically every phase of a principal's duties. Topics treated: Governmental administration; Principal's personal and official relations with board, with pupils and with teachers and parents; Adopting the school to needs of pupils; Grading; Standard tests; Attendance; Curriculum; Health; Play; Student activities; Business side; Material equipment; School housekeeping; Records, reports, accounts; Miscellaneous; Getting a good start; Technique of teaching; Problems of consolidated schools; Principal's professional career.

40. Gary Public Schools: (A General Account.) 265 pages. Flexner and Bachman, General Education Board, New York City. General Education Board. 1918. 25c. Written for: School superintendents and administrators; Students and Boards of Education.

Special contribution: A splendid analysis of both desirable and undesirable points in the Gary system. Topics treated: Gary's environment; School plan and plant; Organization; Administration and supervision; Course of study; Teaching staff; Classroom instruction; Classroom tests; Science teaching; Industrial work; Household arts; Physical training and play; Auditorium and religious instruction; Enrollment, attendance and student progress; Costs; Conclusion regarding the Gary system.

41. Principles of Teaching in Secondary Schools: 367 pages. Herbert H. Foster, University of Vermont. Charles Scribner's Sons. 1921. $1.75. Written for: Secondary and junior high school instructors—experienced and inexperienced.

Special contribution: Explains aims, methods of procedure, and measured results of classroom teaching, citing concrete examples. "Study as self-teaching" especially good. Topics treated: Principles and aims in instruction; Class exercise; The question; Five modes of instruction —problematic, appreciation, expression-appreciation, laboratory, recitation; Study as self-teaching; Lesson organization; Standards and measurements in instruction; Individual and social elements in secondary education.

42. Psychology for Students of Education: 482 pages. A. I. Gates, Teachers College, Columbia University. Macmillan Co. 1923. $2.50. Written for: Teachers in training and also for those already engaged in professional service.

Special contribution: Best solutions of educational problems offered by psychologists are presented, rather than divergent views of several specialists. An excellent book for teachers. Topics treated: Methods and subject matter of psychology; Receiving, connecting and reacting mechanisms; General characteristics of instinctive activity; Role of instincts in habit formation; Laws and principles of economy in learning; Acquisition of ideas; Reasoning and problem solving; Value of individual differences; Intelligence, etc.

43. Educational Measurements and the Classroom Teacher: 265 pages. A. R. Gilliland and R. H. Jordan, Northwestern University and Cornell University. The Century Co. 1924. $2.00. Written for: Teachers interested in the utilization of standardized tests in measuring results of instruction.

Special contribution: Topics treated: Reasons for educational measurements; Requisites for objective testing; Measuring results in the fundamental processes; Secondary school mathematics, science, languages, achievement tests, intelligence tests, etc.

44. Curriculum Practices in the Junior High School: 182 pages. James M. Glass, Director of High Schools, Pennsylvania. University of Chicago Press. 1924. $1.75. Written for: All interested in Junior High School education.

Special contribution: Presents an excellent statistical survey showing the

practices in grades 5-9 in fourteen selected cities; covers practices in thirteen subjects. Topics treated: Need for the scientific reconstruction of the curriculum; The Junior High School curriculum; The core curriculum; Elective courses; Subject divisions and constants; Units of teaching.

45. The Education of the Consumer: 360 pages. Henry Harap, Antioch School, Antioch College. Macmillan Co. 1924. $2.00. Written for: Educators interested in the proper direction of learning activities.

Special contribution: Treats the problem of determining adequate objectives for education with special reference to consumption of food, shelter, clothing, and fuel. Topics treated: A study of curricula material; Food consumption; Housing; Household materials and skill; Fuel consumption; Clothing consumption; Arrangement of objectives for several school subjects.

46. A School Building Survey: 70 pages. F. W. Hart and L. H. Peterson, University of California. Dept. of Education, University of California. 1922. 50c. Written for: School board and citizens of San Rafael, California.

Special contribution: Illustrates the technique of making a school building survey and of presenting the survey results to the public through tabular data, charts, graphs and pictures. Topics treated: What good schools mean to the city; Adequacy of present school buildings and equipment; Progress of children through school; Growth in population and in school enrollment; Ability of the city to provide adequate school-housing facilities; The school building program as recommended.

47. Supervised Study: 398 pages. Alfred Hall-Quest, University of Virginia. Macmillan Co. 1916. $1.80. Written for: Classroom teachers interested in directing the study activities of pupils.

Special contribution: Methods are presented for supervising the study of each of the several subjects of the school curriculum. Topics treated: Proper conditions and hindrances of study; Organization of supervised study; General methods of studying; Methods of studying each of the several subjects; Effectiveness of supervised study.

48. The Textbook: 265 pages. Alfred L. Hall-Quest, University of Cincinnati. Macmillan Co. 1918. $1.50. Written for: Principals, supervisors and teachers choosing textbooks.

Special contribution: It is a pioneer among the very few books which attempt an evaluation of textbooks and show the need for such books. Topics treated: The history of textbooks; How they came to have so prominent a place in American education; Kinds of textbooks listed; Standards for judging textbooks; The textbook as a tool, as a guide, as a source of knowledge, as a means of interpreting truth, and as an incentive or inspiration; Many tables and charts are given, naming current texts and giving their strong and weak points.

49. A Guide to Educational Measurements: 261 pages. H. C. Hines, University of Washington. Houghton Mifflin Company. 1923. $1.90. Written for: Teachers who plan to use educational tests as guides in classroom procedure.

Special contribution: Gives a discussion of the technique of educational testing and methods of interpreting results. In addition, a description is given of each of the tests available for use in the high schools. Topics treated: Measures of central tendency; Variability and relationship; Measures of mental ability; Measures of achievement in each of the principal high school subjects.

50. The Teacher's Technique: 367 pages. Charles Elmer Holley, University of Illinois. Century Company. 1922. $2.00. Written for: Junior and senior high school teachers with little training.

Special contribution: Points of teaching method and classroom procedure for the beginner and student in normal schools. Topics treated:

Factors that condition teaching; Subject-matter; Outcomes of teaching; Class period; Imparting knowledge; Emotions; Reviews; Training in application; Developing individuality; Training to study effectively; Measuring results; Tests and standards; General technique; Lesson plans.

51. High School and Class Management: 320 pages. Horace A. Hollister, University of Illinois. Heath and Company. 1915. $1.60. Written for: Teachers and principals of high schools.

Special contribution: Brings together in compact form a survey of high school problems ably treated from the standpoint of sound theory and wide observation. Topics treated: Evolution and definition of high school; Organization of the school; Employment of teachers; Government of the high school; Readjustment of administrative units affecting high school organization; Selective and advisory functions of the school; Informal life of the school; Material conditions; Daily program of exercises; School attendance and school records; Principles of class management; Program of studies and exercises for the high school; Technique of teaching; Notes on the teaching of English; Notes on foreign language teaching; Notes on instruction in mathematics; Some general considerations as to expression; Notes on the teaching of history; Notes on the teaching of science; Criteria for the selection of high school textbooks; Criteria for the selection of high school library books; Bibliography; Index.

52. The Philosophy of Education: 295 pages. Herman Harrell Horne, Dartmouth College. Macmillan Company. 1904. $1.30. Written for: Educators and students of education.

Special contribution: Deals in a thorough way with the nature and meaning of education. Topics treated: The field of education; The biological, the physiological, the sociological, the psychological and the philosophical aspects of education.

53. A Teacher's Philosophy, In and Out of School: 83 pages. Wm. Hyde, Bowdoin College. Houghton Mifflin Company. 1910. 80c. Written for: The teacher with ideals.

Special contribution: A very practical application of fundamental philosophies of life. Topics treated: The first half of the monograph indicates the democratic principles which underlie the general program of all school organization from the primary schools through the university. The second half applies the fundamentals of the Epicurean, Stoic, Platonic, Aristotelian and Christian philosophies.

54. Principles of Secondary Education: 741 pages. A. J. Inglis, Harvard University. Houghton Mifflin Company. 1918. $3.10. Written for: Secondary teachers and administrators.

Topics treated: Nature of pupils to be educated, considering physical and mental traits, individual differences and character and classification of high school population; Character of social organization and social ideals, considering historical background and growth of secondary schools, also their relation to elementary schools and higher education. Comparative study with foreign systems of education also considered. Discussion given to aims, functions and social principles involved in secondary education; The means and material available for secondary education; Analysis of subject-matter taught; Its justification for place in curriculum and also pertinent suggestions concerning organization and making and developing of curriculums for secondary schools. Valuable bibliography appended to each chapter and helpful index given.

55. The Problems of Boyhood: 130 pages. F. W. Johnson, Teachers College, Columbia University. University of Chicago Press. 1914. $1.35 (cloth) 80c (paper). Written for: Teachers and boys in out-of-school neighborhood groups.

Special contribution: The book is valuable as a study book for a Y. M. C. A. or Boys' Club Group, as it

gives material for discussion on the various problems which a boy meets. Topics treated: Two views of boyhood; Some elemental problems; Custom, habit, honesty, property rights; Gambling and betting; Speech; Slang and profanity; Clean thinking and speaking; The problem of sex; Alcoholic liquor and tobacco; Courtesy and respect; Self-control; Conservation and efficiency; Loyalty; Citizenship; Clubs and fraternities; The idealism of boyhood; Choice of a life-work; Religion.

56. High School Education: 470 pages. Chas. H. Johnston and Others, University of Illinois. Scribner's. 1912. $1.88. Written for: All serious students of our modern high school.

Special contribution: Treats from every angle the best approaches to the problems of high school programs and curriculums. Topics treated: Current demands on program; Disciplinary basis; History; Principles and plans for re-organization of courses of study; Instruction; Mathematics; Physics; Chemistry; Biology; Physiology; English; Latin; Public speaking; Modern language; Social sciences; Drawing; Music; Moral education; Physiology and hygiene; Sex pedagogy; Agriculture; Commercial subjects; Vocational training; Practical arts for girls; Psychology; High school library.

57. The Modern High School: 759 pages. Chas. H. Johnston and Others, University of Illinois. Scribner's. 1914. Written for: Superintendents and principals.

Special contribution: Contributes to and stimulates the movement of socializing school. Topics treated: Social administration; High school education as social enterprise; Legal status of high school; High school and business enterprise; Relation of high school to elementary school; Relation of high school to higher schools; Relation of high school to industrial life of community; Socialized curriculum and courses of study; Class management in relation to family and community; Direction of study chief aim of high school; Social value of school study vs. home study; Home and school association; Co-operative agencies.

58. Junior-Senior High School Administration: 389 pages. Chas. H. Johnston, University of Illinois; Jessie H. Newlon, Superintendent of schools, Denver; Frank G. Pickell, Assistant superintendent, Cleveland. Scribner's. 1922. $1.88. Written for: Junior and senior high school principals.

Special Contribution: Presents in striking contrast the differing points of view held by groups of educational theorists. Treats a wide range of topics all of which must be thought through by the high school principal. Topics treated: Education for the new democracy; Party platforms in education; Junior high school administration; Curriculum organization; Socialized recitation; Supervised study; Supervision of teachers and teaching; The high school library; High school publicity; The new conception of principalship; High school and modern citizenship.

59. Psychology of High School Subjects: 508 pages. Chas. H. Judd, University of Chicago. Ginn and Company. 1915. $2.20. Written for: Teachers of high school subjects interested in the psychological aspects of subject matter. Topics treated: Psychology of mathematics; of space; of geometry; of number and abstraction; The re-organization of mathematics; Psychology of English; English problems; Psychology of English course; of foreign languages; Opposition between practical arts and language; Industrial courses; Science; Fine arts; History; Generalized experience; Teaching students to study; General problems of secondary education.

60. The Nation and its Schools: 352 pages. J. A. H. Keith, State Normal School, Indiana, Pennsylvania; W. C. Bagley, Teachers' College. Macmillan. 1920. $1.60. Written for: School administrators interested in ed-

ucation as a function of the national government.

Special contribution: Gives fact and argument to show that the nation is the real educational unit, that the Federal Government should bear in part the expense of education and that the educational needs of the nation should be in the hands of an adequate agency at Washington. Topics treated: Early grants for the support of education; National educational association and Federal aid; What the war revealed; Illiteracy among native born; Americanization; Health education; Preparation of teachers; and a National department of education.

61. The High School Age: 224 pages. Irving King, University of Iowa. Bobbs-Merrill. 1914. $1.50. Written for: All responsible for care and culture of boys and girls through their teens.

Special contribution: Gives a non-technical treatment of the physical, mental, and social characteristics of boy life and girl life. Topics treated: Waste in high school; Physical changes of high school years and school efficiency; Mental changes and broadening vision; Economic and social interests of high school pupils; Study habits and amusements of high school pupils; Adaptation of high school to the needs of its pupils.

62. How to Use Your Mind: 215 pages. Harry D. Kitson, University of Chicago. Lippincott. 1916. $1.50. Written for: Students and teachers in administration of supervised study.

Special contribution: Suggestions on ways of studying effectively and how to accomplish effective study work. Topics treated: Intellectual problems of the college freshman; Note-taking; Brain action during study; Formation of study habits; First aids to memory; Concentration of attention; How we reason; Expression as an aid in learning; The plateau of despond; Mental second wind; Examinations; Bodily conditions for effective study.

63. The High School Principal: 121 pages. Leonard V. Koos, University of Minnesota. Houghton, Mifflin Co. 1924. $1.20. Written for: All those interested in educational progress, especially for school boards, superintendents, and principals.

Special contribution: Contains brief discussions and many clear graphs in connection with the following topics treated: Study of the high school principal; Education and training of principals; Professional stability; His activities and responsibilities, etc.

64. The Junior-College Movement: L. V. Koos, University of Minnesota. Ginn and Company. 1925. Written for: Secondary school principals interested in the upward extension of secondary education.

Special contribution: Compact and readable survey of both public and private junior colleges. Topics treated: Scope and variety of movement; Current conceptions of the special services; Instructors and instruction; Its democratising function; Trends in reorganization in higher education; Overlapping in high school and college; Evaluating types of junior colleges, etc.

65. The Junior High School: 179 pages. Leonard V. Koos, University of Minnesota. Harcourt, Brace and Company. 1920. $1.40. Written for: Primarily administrators and principals. Also valuable to classroom teachers in grades seven to nine.

Special contribution: Gives suggestions to those interested in reorganization on the 6:3:3 plan. Topics treated: The movement for reorganization; The peculiar functions of the junior high school; The test of the organization; The program of studies; Other features of reorganization; The standard junior high school.

66. Psychology for Teachers: 316 pages. Daniel Wolford La Rue. American Book Company. 1920. $1.40. Written for: The teacher who wishes to put psychology to practical use in the classroom.

Special contribution: Brings to bear upon the problems of teaching the principles of psychology and their special applications as they have been derived by recent investi-

gations. Topics treated: What the mind is made of; Hearing and seeing; Impression and perception; Recording and reproducing experience; Analyzing and associating; Imagery and imagining; Thinking; The feelings; Types of behavior; Individuality and individual differences; Striking variations of personality; Mental hygiene and mental efficiency.

67. Personnel Problems of the Teaching Staff: 457 pages. Ervin E. Lewis, Superintendent of Schools, Flint, Mich. The Century Co. 1925. $2.25. Written for: Administrators and supervisors interested in personnel problems.

Special contribution: Brings together considerations from a wide variety of sources; classifies and interprets findings of many investigators. Topics treated: Personnel supervision —typical problems; Problems in training, certification, and selection of teachers; Measuring merit of teachers; Loads; Salaries; Tenure; Organizations; Ethics of the teaching profession.

68. Democracy's High School: 125 pages. William D. Lewis, William Penn High School. Houghton Mifflin. 1914. 60c. Written for: Every man and woman interested in boys and girls.

Special contribution: Suggests points where the high schools can render larger service than the mere inculcation of knowledge. Topics treated: A social view of the high school—pointing out the defects and methods for remedy; The high school and the boy; The old and the new; Holding the boy; The high school and the girl; Course adapted to girls' needs; The high school and the college; The administration of the course of study; An expression of real service; Required studies; Thorough courses; Electives; Promotion.

69. The Redirection of High School Instruction: 286 pages. H. G. Lull, Kansas State Normal School; H. B. Wilson, Berkeley, California. J. B. Lippincott Company. 1921. $1.60. Written for: Present and prospective secondary school teachers and administrators.

Special contribution: Emphasizes and points the way clearly to the socialization of various phases of high school activities. Shows how the high school may become an active agent in solving the problem of social adjustment. Topics treated: Traditional and functional elements of instruction; The social core of the high school curriculum; Instruction in the prescribed subjects of the junior high school; Project-problem instruction; Need for efficiency in school work; For common knowledge and training in English composition; For physical training for all students; For a common knowledge of contemporary world history; A common need for American history; For civic instruction; The need of vocational training; Of preparing students for professional destinations; For recreational and avocational activities; For a general cultural development; The social background of high school instruction; Examples of small city and town high schools undergoing processes of redirection.

70. Readings in the Junior High School Movement: 215 pages. R. L. Lyman and P. W. L. Cox, University of Chicago and New York University. Laidlaw Brothers. 1925. $1.00. Written for: All interested in tracing the development of the Junior High School movement.

Special contribution: Gives points of view of many writers through quoted articles. Topics treated: Purpose and development; Description of typical school; Organization and program; Pupil activities; Characteristic results; An excellent bibliography is given.

71. How to Measure in Education: 410 pages. William A. McCall, Teachers' College. The Macmillan Company. 1922. $3.25. Written for: Administrators and supervisors.

Special contribution: Brings together in one volume most of the technique needed by those engaged in mental measurements. Topics treated: Place of measurement in education; Measurement in classifying, diagnosis,

teaching, evaluating instruction, vocational guidance; Preparation and validation of test material; Organization of test material and preparation of instructions; Scaling the test; Determination of Reliability; Objectivity and

72. How to Study and Teaching How to Study. 312 pages. F. M. McMurray, Teachers College. Houghton Mifflin Company. 1909. $1.25. Written for: The teacher.

Special contribution: Gives examples from every day experiences which illustrate principles presented. Topics treated: Methods of study; The principal factors of study; The nature of these factors and their relation to children; The full meaning of study—its relation to the children and to the school.

73. The Unstable Child: 471 pages. Florence Mateer. American Book Company. 1924. $2.75. Written for: Indispensable to the student counselor.

Special contribution: Deals with the study of the problem child, a psychological treatise but written in a very simple, intelligible style. Considers the subject in an up-to-date manner. Topics treated: An interpretation of psychopathy as a source of unbalanced behavior in abnormal and troublesome children.

74. The Selection of Textbooks: 138 pages. C. R. Maxwell, University of Wyoming. Houghton, Mifflin Co. 1921. $1.20. Written for: Teachers, administrators, and board members.

Special contribution: Suggests a simple method of evaluating textbooks. Topics treated: The textbook a necessary tool; Current methods of selection; Standards for selection; Special outlines for evaluating texts in given subjects.

75. The Educational Bearings of Modern Psychology. 143 pages. Christabel M. Meredith. Houghton Mifflin Company. 1914. $1.20. Written for: School supervisors, teachers.

Special contribution: Is an appeal for scientific thinking. Topics treated: The nature of instinct; The modification of instinct; Purposive action and mental growth; The growth of habits and sentiments; Environment and suggestion; Experiment in education; Special studies in connection with memory and adolescence.

76. Directing Study. 377 pages. Harry Lloyd Miller, University of Wisconsin. Scribner's. 1922. $2.00. Written for: Teachers and principals of junior or senior high schools who are interested in stimulating pupils to creative thinking.

Special contribution: Provides a wealth of illustrative material whereby the student can develop through creative thinking and whereby the class room can be so organized as to produce the maximum of individual effort. Topics treated: A manual of suggestive procedures; Administration of directing study; The learning process; Organizing principles and differentials; The development of the work spirit; Application of the social principle; Initiative and authority; Successes and failures in school work; Suggestive helps and problems for teachers in using this book; Definition and use of terms.

77. The Self-Directed School: 404 pages. Harry L. Miller and Richard T. Hargreaves; (Miller) University of Wisconsin, (Hargreaves) Principal, Central High School, Minneapolis, Minn. Charles Scribner's & Sons. 1925. $1.80. Written for: Those interested in producing through the school program self-active, responsible, socially minded individuals.

Special contribution: Suggests a means of meeting demands of classification, not by segregation, but by integration on a common basis of shared life. Topics treated: Guide lines in thinking; Educating up to capacity; Curriculum thinking and building; The individual and the broader curriculum; Semi- and extra-curricular activities, guidance, etc.

78. The Teaching of High School Subjects: 470 pages. William A. and Harriett H. Millis, (William A.) President, Hanover College. The Century Co. 1925. $2.25. Written for: Stu-

dent teacher-training institutions and teachers in service.

Special contribution: Gives a brief discussion of the problems involved in teaching the several high school subjects. Topics treated: Functions of the high school; Educational values; Teaching processes; Teaching of high school English, Latin, modern languages, history, social studies, science, mathematics, vocations, physical education, moral, and religious education; Training pupils to study.

79. Principles of Secondary Education. 790 pages. Paul Monroe and Others. Teachers College. Macmillan. 1914. $3.40. Written for: Principals and students of education.

Special contribution: Gives not the opinions of one author, but a compilation of well prepared discussions by specialists in each field. Topics treated: Meaning, scope, history and systems of secondary schools, particularly applied to those in France, Germany, England and the United States; Organization of and administration in high schools; The psychological and physiological and ethical problems of adolescence, including a discussion of moral and religious education; The status, methods of teaching, and scope of all the subjects included in high school curriculum.

80. The Present Status of Written Examinations and Suggestions for Their Improvement: 77 pages. W. S. Monroe and L. B. Souders, University of Illinois, Urbana. 1923. $0.50. Written for: All teachers interested in the improvement of examinations.

Special contribution: An experimental study and statistical study of the validity and reliability of examinations. Topics treated: Criticisms of written examinations; Preparation and administration in the high school; Constant and variable errors in examination grades; Content; Improvement; Rules governing preparation; Examples of the new type examination for several subjects.

81. Educational Tests and Measurements: Revised and enlarged edition: 521 pages. Monroe, W. S., University of Illinois; DeVoss, J. C., State Teacher's College, San Jose, California, and Kelly, F. J., University of Minnesota. Houghton, Mifflin Co. 1924. $2.00. Written for: Teachers, supervisors, and principals.

Special contribution: Information concerning a large number of educational tests and scales. Topics treated: Elementary school tests, high school tests, intelligence tests, testing programs, construction of standardized tests, meaning of scores, administrative and supervisory uses of educational tests, improvement of the written examination.

82. What Is Education?: 357 pages. Ernest Carroll Moore, Director of University of California, Southern Branch. Ginn and Company. 1915. $1.48. Written for: Teachers in all grades of schools.

Special contribution: Sections are devoted to defining education, defining knowledge, the doctrine of general discipline, education as world building, the kinds of education, learning by doing, the place of method in education, learning by problem getting, organization by selection, diagnostic education, and learning to work with concepts.

83. Principles of Teaching High School Pupils. 357 pages. Hubert Wilbur Nutt, University of Kansas. Century Company. 1922. $2.00. Written for: Teachers and principals.

Special contribution: Shows that the pupil must be made the point of departure in high school teaching, not the subject. Puts into practice teaching principles. Topics treated: Introduction—definition of terms; The modern conception of the High School; Method of learning; Motivation of learning; Individual differences; Organization of subject-matter; Devices for measurement of results of teaching; Techinque of teaching; Supervision of study habits of high school pupils; The problem of conduct.

84. The Supervision of Instruction: 277 pages. Hubert Wilbur Nutt. University of Kansas. Houghton Mifflin

Company. 1920. $1.80. Written for: School supervisors.

Special contribution: Presents a practical discussion of the devices and the technique which should and which should not be employed in supervising classroom instruction. Topics treated: The job of supervision; Supervisory method; Devices of supervision; Technique of supervision; These main heads are subdivided to include: A discussion of the training of supervisors; A general discussion of supervising activities; One on the first principle of method; The basis for co-operative teaching in the elementary school; A similar discussion in regard to the secondary school; The principles involved in the selection of the devices; Principles underlying the selection of technique; Selected forms of technique; Estimating the worth of the teacher; Estimating the worth of supervision.

85. Methods of Teaching in High Schools: 510 pages. Samuel C. Parker, University of Chicago. Ginn and Company. 1915. $2.75. Written for: Supervisors, class room teachers in high school.

Special contribution: Gives the general principles of education as applied to the high school curriculum rather than specifically by subject. Topics treated: Purposes of high school instruction; Economy in class room management; Selection and arrangement of material; Types of learning involved; Acquiring motor control; Associating symbols and meanings; Drill-reflective thinking; Forming habits of harmless enjoyment; Supervised study; Conversational and laboratory methods; Art of questioning; Practice teaching; Measuring results.

86. The High School Problem: 303 pages. Francis B. Pearson, State Superintendent of Public Instruction of Ohio. Row, Peterson and Company. 1916. $1.25. Written for: The individual teachers of the high schools.

Special contribution: Responsibilities of the high school to society, and relation of the school and society. Topics treated: The high school a democratic institution; Its aims and functions; Its organization; Problems of the teacher; The principal and the pupils; The curriculum; Teaching methods; Discipline; College influence; School activities; etc.

87. Psychology of the Junior High School Pupil: 280 pages. L. A. Pechstein, University of Cincinnati and A. Laura McGregor, Washington Jr. H. S., Rochester, N. Y. Houghton Mifflin Company. 1924. $2.00. Written for: Teachers of junior high schools, for supervisory officers of school systems, and for teachers and principals of senior high schools.

Special contribution: A very timely contribution treating of the laws of psychology and of learning among adolescents. Especially good chapters on "knowing and the adolescent" and personality in adolescence. A section deals particularly with the application of adolescent psychology to instruction, socialization and guidance in the junior high school.

88. Intelligence Testing: 398 pages. Rudolf Pintner, Teachers College. Henry Holt and Company. 1923. $0.00 Written for: Students interested in the scientific phases of education.

Special contribution: Gives a comprehensive yet readable treatment of the intelligence test movement. Topics treated: Early history of intelligence testing; Work of Binet; Recent developments; Scales and group tests; Application of intelligence tests as they relate to the feeble minded, the superior child, the school child, the college student, the delinquent, the dependent, the deaf, the blind, the negro, the foreign born, the employee; The inheritance of intelligence.

89. Introduction to the Use of Standardized Tests: 263 pages. S. L. and L. C. Pressey, Ohio State University. World Book Company. 1922. $1.80. Written for: The busy teacher, principal, and superintendent.

Special contribution: Gives a simplified presentation of the subject of tests, with a glossary of technical

terms and an excellent bibliography. Topics treated: The relation of the school problems of the teacher, the principal, and the superintendent to standardized tests; Common sense statistics and the use and misuse of tests; Discussion of the various tests for elementary and secondary school subjects; Measurement of mental ability; General principles regarding tests; How tests are made; The testing program; Making the testing program worth while.

90. Adolescence and High School Problems: 386 pages. Ralph W. Pringle, Illinois State Normal. D. C. Heath and Company. 1922. $1.60. Written for: Prospective high school teachers and principals.

Special contribution: The solution for various problems growing out of high school teaching and management. Topics treated: Methods of solving education problems; Pre-adolescence; Psychology of adolescence; Physiological changes and characteristics; Mental growth and reconstruction; Social characteristics and their importance; Moral aspects; Transition to Secondary School; American high school group; The curriculum; Social activities; Literary societies; Debating; High school journalism; Athletics; Pupil finance; Assembly; Sex education; Moral education; Principles and methods of appeal.

91. Psychological Tests and Vocational Guidance of High School Pupils: 70 pages. Wm. Proctor, Standford University. Public School Publishing Company. 1921. $1.25. Written for: All interested in the relationship between intelligence levels and success of students in high school and college.

Special contribution: Gives the methods and results of an extended investigation of the relationship of intelligence and success of a sizeable group of students of secondary grade. Topics treated: Psychological tests of high school pupils as a means of measuring probable school success, as a basis for educational and vocational guidance, as a means of determining fitness for college.

92. Making a High School Program: 27 pages. Myron W. Richardson, Boston, Mass. World Book Company. 1921. 60c. Written for: High school principals.

Special contribution: A scientific method of constructing a high school program as opposed to the "trial and error" method. Topics treated: Selection of work by pupils; Tabulation of selection blanks and summary sheets; Class sections; Making a school program; The block system; Distribution of recitation sections; Assignment of teachers and rooms to recitation sections; Indications of block numbers upon pupils selection of studies sheet; Tabulation and equalization of recitation section; Determination of home rooms and study rooms; Making out pupils' programs by teachers; Teachers' schedules of work.

93. The Adolescent Girl: 205 pages. Winifred Richmond, George Washington University. Macmillan Company. 1925. Written for: Parents and teachers.

Special contribution: Provides tentative answers to questions arising with those who deal with girls whether in the home, school or other institutions. Topics treated: Adolescent girl in earlier times; Meaning of puberty; The abnormal girl; The delinquent girl; The normal girl; Training and education.

94. The Socialized Recitation: 100 pages. Charles L. Robbins, University of Iowa. Allyn and Bacon. 1920. $2.00. Written for: Teachers in elementary and secondary schools.

Special contribution: Gives a thorough exposition of difficulties, dangers and values of the socialized recitation. Topics treated: Weakness of individual recitation; What the socialized recitation tries to accomplish; The nature of socialization; The aim of the socialized recitation; How to organize; Illustrative lessons; Dangers to avoid; Qualities to develop; Problems

of the teacher as a spectator and student of class affairs.

95. Improvement of Written Examinations: 196 pages. G. M. Ruch, State University of Iowa. Scott, Foresman and Co. 1924. $1.80. Written for: All interested in improving the status of examinations and really testing the results of teaching.

Special contribution: Shows teachers the fault and danger in typical examinations, with an attempt to develop technique for eliminating the objectionable features. Topics treated: Functions of written examinations; Criteria of a good examination; Sources of error in written examinations; Types and construction of the newer objective examinations; Experimental studies of several types of objective examinations; Statistical considerations related to examination technique; Appendix with new type examinations in high school subjects.

96. A Primer of Graphics and Statistics for Teachers: 132 pages. Harold L. Rugg, Columbia University. Houghton, Mifflin Co. 1925. $1.60. Written for: Teachers interested in an elementary presentation of school data.

Special contribution: Treats in a very simple way the problem of presenting differences in children's abilities through distribution tables, frequency charts, etc. Also gives a simple method of computing measures of central tendency, variability, correlation, etc.

97. Statistical Methods Applied to Education: 360 pages. H. O. Rugg, University of Chicago. Houghton Mifflin. 1917. $2.60. Written for: All interested in the scientific study of education.

Special contribution: Gives to all interested in the scientific phases of education the technique with which such study may be pursued. The last chapter is of special value to school principals who desire suggestions on the effective presentation of school data. Topics treated: Use of statistical methods in Education; Collection of educational facts; Tabulation of educational data; Methods of averages; Measurement of Variability; Use of normal frequency curve in Education; Measurement of relationship; Use of tabular and graphic methods in reporting school facts.

98. How to Study and What to Study: 170 pages. Richard L. Sandwick. D. C. Heath and Company. 1915. 88c. Written for: Students and teachers.

Special contribution: The general principles of effective study and what to study and how. Topics treated: Principles of effective study; Reasons for and how to study the following subjects: History, Latin, English, Modern Languages, Mathematics, Sciences, Economics, Psychology and Drawing; Vocation analysis of twelve vocations; What is efficiency?

99. Classroom Organization and Control: 291 pages. J. B. Sears, Stanford University. Houghton Mifflin Co. 1918. $2.00. Written for: Teachers in training and teachers with limited training.

Special contribution: Viewpoint—that education is process of nurturing, fostering and assisting individuals and groups that health and progress may result for the race. Topics treated: Meaning and aim of Education; Function of aim in management; Human factors concerned; Environment and teacher as factors; Memberships and attendance; Order and discipline; School punishments; Incentives in management; Organizing the school; Grading and promotion; School curriculum; Daily program; Class studying; Class reciting; Testing effectiveness of machinery and process; Teacher's personality; Teacher's training and growth; Teacher's health and recreation; Teacher at work.

100. The School Survey: 433 pages. Jesse B. Sears, Stanford University. Houghton, Mifflin Co. 1925. $2.25. Written for: Administrators interested in school policies and effective presentation of results attained.

Special contribution: Suggests criteria for measuring results and forms for presentation of statistical data.

Topics treated: Nature and function of the school survey; Larger problems of administration; Internal administration and management; Efficiency of instruction and supervision.

101. Problems of Secondary Education: 330 pages. David Snedden, Columbia University. Houghton-Mifflin Co. 1917. $2.25. Written for: Principals interested in a critical examination of educational objectives and secondary school procedure.

Topics treated: Problems of the superintendent; The unversity president; The college professor; The principal of each of the several types of high school; The teachers in the several departments of the high school, etc.

102. Your Problems and Mine: 274 pages. J. K. Stableton, Bloomington, Ill. Public School Publishing Company. 1922. $1.50. Written for: School officers, teachers and parents.

Special contribution: Gives a number of special cases of problems in training of children and methods of solution. Topics treated: Sample Cases; Characteristics of youth with concrete cases; Religious awakening; Mild types; Demonstrative types; Dreams and Dreamers; Mistrust of parents; Cheating; Stealing; Awakening to consciousness of power; Away from school; Sex attraction; Athletics; Health of girls; Changes in intellectual power.

103. Educational Psychology: 473 pages. Daniel Starch, University of Wisconsin. Macmillan Company. 1923. $2.50. Written for: The classroom teacher.

Special contribution: Gives a thorough review of the experiments bearing on the psychology of learning. Topics treated: Native equipment—its variability in single traits and combinations, at different period of life, and between the sexes, its inheritance and its measurement; Psychology of learning—its observation and progress, and the transference of training; The psychology of learning the several school subjects; The processes involved; The measurement of progress and the most economical methods.

104. Progressive Methods of Teaching: 364 pages. Martin J. Stormzand, University of Southern California. Houghton, Mifflin Co. 1924. $2.00. Written for: Teachers interested in understanding and using the best modern teaching methods.

Special contribution: Suggests scientific method, accurate measurement of controlled experimentation. Topics treated: Dangers and values of textbook teaching; Using collateral materials; Supervised study; Project and problem methods; The object lesson and laboratory method; Skills, habits, and drill; Socialized recitation; New methods in testing; Trend toward individual instruction.

105. A Brief Course in the Teaching Process: 315 pages. George D. Strayer, Teachers College, Columbia University. Macmillan Company. 1912. $1.25. Written for: Teachers in service.

Special contribution: Stimulates teachers to grow in skill of teaching, gives expression to fundamental principles as illustrated in classroom procedure. Topics treated: Aim of Education; Teaching Process and the factors conditioning the teaching process; Dull Season; The Inductive lesson; The Deductive lesson; The Study lesson; Review or Examination lesson; Recitation lesson; Questioning; Social phases of the recitation; Physical welfare of the children; Moral training; Class management; Lesson plans; The teacher and supervision; Measuring results in Education.

106. The Classroom Teacher: 400 pages. George D. Strayer, Teachers College, Columbia University, and N. L. Engelhardt, Teachers College, Columbia University. American Book Company. 1920. $1.50. Written for: Principals and teachers.

Special contribution: Presents methods of bringing about coordination and cooperation between teaching and administration. Topics treated: Education for democracy and its

organization; Supervision of teaching; Variability, classification and progress of pupils; Technique and methods of teaching; Standards of measurement; Class organization; Health education; Records and reports; Extra-curricular activities; Plant and equipment; Teacher and community; Realization of professional aims.

107. How to Teach: 294 pages. George D. Strayer and N. Norsworthy, Teachers College, Columbia University. Macmillan Company. 1917. $1.30. Written for: All teachers.

Special contribution: Gives a comprehensive summary of the principles of psychology involved in teaching and their application to the classroom. Topics treated: Social aim of education; Original nature of child; Importance of attention and interest; Formation of habits; How to memorize; Use of imagination; How to stimulate thought; Appreciation; Individual differences; Transfer of training; Moral social conduct; How to study; Types of classroom exercises; Measurements.

108. School Records and Reports: 75 pages. George D. Strayer and N. L. Englehardt, Teachers College, Columbia University, New York City. Bureau of Publications, Teachers College, New York City. 1924. $1.00. Written for: High School principals and students of school administration.

Special contribution: Contains a copy of each of the many types of blanks which a principal may well use in making school records and reports.

109. Standards for High School Buildings: 75 pages. G. D. Strayer and N. L. Englehardt, Teachers' College, Columbia University, New York City. Bureau of Publications, Teachers College. 1924. $1.00. Written for: High School principals and students of school administration.

Special contribution: Presents a full discussion of the features which should characterize a high school building. An adequate basis is provided on which to measure the extent to which a given high school building and equipment meet the best thought of the day on school house planning. A 1000-point score card is included.

110. The Intelligence of School Children: 313 pages. Lewis M. Terman, Standford University. Houghton Mifflin Co. 1919. $2.00. Written for: All students of Education — especially teachers and directors of teachers.

Special contribution: Gives a survey of place and service of intelligence testing in field of education. Topics treated: Principles of intelligence testing; Individual differences; School laggards and superior children; The I. Q. as a basis for prediction; The tests in vocational educational guidance; Practical suggestions for the use of tests.

111. The Hygiene of the School Child: 405 pages. Lewis M. Terman, Stanford University. Houghton Mifflin Co. 1914. $2.15. Written for: Teachers in training and teachers' reading circles.

Special contribution: Treats of the hygiene of physical and mental growth; gives many figures, charts and illustrations. Topics treated: Broader relations of educational hygiene; Physical basis of education; General laws of growth; Malnutrition in school children; Tuberculosis and the school; Physiology and ventilation; Physical Examinations; Preventive mental hygiene; Suggestions for a teacher's private library on the hygiene of physical and mental growth.

112. Training for Effective Study: 246 pages. F. W. Thomas, State Teachers College, Fresno, California. Houghton Mifflin Company. 1922. $1.90. Written for: Teachers and supervisors interested in training of pupils in the formation of good study habits.

Special contribution: Gives suggestions as to proper motivation of work, setting up standards by pupils for their own work; Effective methods of attacking problems; Training of pupils in thinking for themselves. Topics treated: Meaning, importance

and conditions of study; Knowing what is to be studied; Having a motive for study; Effective methods of study; Supervision of study.

113. Junior High School Life: 281 pages. Thomas-Tindal, Emma V. and Myers, Jessie DuVall, Principal and Teacher of English in Holmes Junior High School, Philadelphia. Macmillan. 1924. $2.00. Written for: Students of Junior High School education who are interested in knowing how guidance functions in the attainment of the aim of education in a democracy.

Special contribution: Treats of the various phases of guidance; physical; curricular; scholastic; social; vocational; civic; ethical; school clubs; school government; inter-curricular activities.

114. Instinct, Intelligence, and Character: 282 pages. Godfrey H. Thomson, Armstrong College, Newcastle-upon-Tyne. Longmans, Green & Co. 1925. $3.50. Written for: All students of education, especially for teachers.

Special contribution: A very readable discussion of educational psychology. Topics treated: Heredity; Instincts; Play; Intelligence; Nature of satisfaction and dissatisfaction; Nervous system; Brain localization; Interests and prejudices; Tests; Methods of memorizing and acquiring skill.

115. Individuality: 60 pages. Edward L. Thorndike, Teachers College, Columbia University. Houghton Mifflin Co. 1911. 80c. Written for: Teachers and educators.

Special contribution: Establishes a point of view and indicates a safe method of approach to this intricate study of human nature. Topics treated: The nature of individual differences; Differences in single traits; Individual differences in combinations of traits; The causes of individual difference; The influence of sex; The influence of race, near ancestry, education; Significance of individual differences.

116. Junior High School Procedure: (In press). Frank C. Touton and Alice B. Struthers, University of Southern California and Principal-elect of Starr-King Junior High School, Los Angeles, California. Ginn and Company. 1925. Written for: Teachers and principals interested in junior high school objectives and their attainment through the curricular and school activities.

Special contribution: Gives specific guidance in the administration and supervision of the junior high school and in teaching of junior high school subjects. Topics treated: The junior high school, a democratic organization; Staff organization; Guidance; Making the schedule; Directing learning activities; Measuring and recording progress, including the new type examination for the several subjects; Study helps; Teaching the several subjects; Attendance system; Buildings and grounds; Self-rating cards for principal, teacher and pupil; Exhibits, pupil and cost accounting; Supplementary bibliographies.

117. Measuring Results in Education: 486 pages. Marion R. Trabue, University of North Carolina. American Book Co. 1924. $2.00. Written for: Teachers who seek to gain an adequate understanding of the several measures of school achievement.

Topics treated: Gives explanation of tests covering fundamental processes and means of measuring central tendency, variability, and correlation. Also treats of educational uses of intelligence tests.

118. Principles of Secondary Education: 677 pages. W. L. Uhl, University of Wisconsin. Silver-Burdette & Co. 1925. $3.00. Written for: Students of the theory of secondary education.

Special contribution: General discussion by the author supported by many articles quoted from the writings of educational specialists. Topics treated: American plan for secondary education; The secondary school teacher and pupils; Secondary education in foreign countries; Reorganization movement in secondary education; Curriculum problems.

119. The Junior High School Idea. 423 pages. Joseph K. VanDenburg, Teachers College, Columbia University. Henry Holt and Co. 1922. $1.50. Written for: Junior high school principals especially, of some interest to teachers.

Special contribution: Clearly discusses the junior high school problem and items worth while in junior high school administration. Topics treated: Tests and results; Course of study; General method in junior high school; Subjects discussed; Physical training; Study methods; Project method; Socialized recitation; Examination; Report cards; Pupils' self-government; Teacher participation in school government.

120. Procedures in High School Teaching: 330 pages. Douglas Waples, University of Chicago. Macmillan. 1924. $2.00. Written for: Students of education interested in the problem method approach to the methods of teaching in secondary schools.

Topics treated: Introducing the course; The high school teacher's activities; Studying the pupil; Motivation; Discipline; The lesson—plan, assignment, and types; Teaching pupils to think; Testing results, etc.

121. Principles and Methods of Teaching: 677 pages. James Welton, University of Leeds. University Tutorial Press, Ltd., London, England. 1909. Written for: Teachers in training.

Special contribution: Sets forth a curriculum for primary schools. Topics treated: General function of teaching; Material of instruction; Form of instruction; Special methods in English, Music, History, Geography, Natural History, Mathematics, Form, Needlework, Modern Language.

122. How to Study Effectively: 42 pages. Guy M. Whipple, University of Illinois. Public School Publishing Co. 1916. 50c. Written for: Student advisors and students of college and high school.

Special contribution: Sets forth a good guide to proper habits in study. Topics treated: A clear discussion of directions that, if followed, will result in proper study habits; Physical condition of student: Physical condition of room; Mental attitudes of students and other valuable data.

123. Graphic Methods in Education: 316 pages. J. Harold Williams, Lecturer of Education, University of California, Southern Branch. Houghton, Mifflin Co. 1924. $2.00. Written for: School officers interested in a display of statistical facts.

Special contribution: Gives a practice in methods serviceable in portrayal of statistical data. Topics treated: Gives diagrams drawn from a wide variety of sources showing various methods of displaying the several types of school data; The merits of the several types of diagrams are weighed.

124. The Motivation of School Work: 256 pages. H. B. Wilson, City Schools, Berkeley, California, and G. M. Wilson, Boston University. Houghton Mifflin Co. 1916. $1.90. Written for: Teachers and supervisors.

Special contribution: Gives valuable suggestions for adding interest to the various school subjects. Topics treated: Present needs in Education; Definition of motivation; Psychological basis for motivation; Origin and sources of motives; Motivation of reading; Motivation of language; history, geography, arithmetic, etc.; Social activities and efficiency.

125. Brightness and Dullness of Children: 310 pages. Herbert Woodrow, University of Minnesota. Lippincott and Co. 1919. $1.40. Written for: Educators, administrators of schools, teachers and others working with children.

Special contribution: Gives a broad and thorough discussion of intelligence in all its various phases and discusses methods of measuring intelligence. Topics treated: The measurement of intelligence; Brightness and dullness; Brains; Physical de-

fects; Anatomical age; Pedagogical age; Simple mental processes; Association, memory and attention; Complex mental processes: Mental organization; Heredity; The organization of Education; Educational methods.

126. A Study of Some High School Seniors of Superior Intelligence: 75 pages. Dorothy Hazeltine Yates, Stanford University. Public School Publishing Co. 1921. $1.25. Written for: Those interested in problems of superior children.

Special contribution: Appeals for constructive aid in education for the super-normal based upon intelligence testing. Topics treated: Purpose and method of a study of some high school seniors of superior intelligence; Nativity; Home conditions; Relatives of groups studied; Health and physical development; Education and mental development; Interests of students studied; Conclusions.

BOOKS RECOMMENDED FOR THE PROFESSIONAL LIBRARIES OF TEACHERS IN SECONDARY SCHOOLS

FOR TEACHERS IN AGRICULTURE

1. **Agricultural Education for Teachers:** 172 pages. Author: Garland Armor Bricker, Ohio State University. Publisher: American Book Company. Published: 1914. Cost $1.20. Written for: Prospective teachers of Agriculture.

Special contribution: A guide to systematic agricultural education. Presents general treatment of the subject. Topics treated: The historical development of agricultural education and the proper position of the farmer; The qualifications and training of teachers; The problems of teaching and the apparatus and equipment needed; The demonstration field, home projects and agricultural clubs.

2. **The Teaching of Agriculture in High School:** 202 pages. G. A. Bricker, Ohio State University. Macmillan Company. 1911. $1.60. Written for: Teachers and principals of high schools offering agriculture.

Special contribution: Sequence and organization of subject matter. Topics treated: Historical sketch; Secondary agriculture distinguished from elementary and college agriculture; Agriculture as a separate science; Psychological and seasonal determination of sequence; Methods of presentation; Organization of laboratory and field work; Exercises in plant and soil studies.

3. **Methods of Teaching Vocational Agriculture:** 142 pages. Samuel H. Dadisman, University of California. Richard G. Badger, Gorman Press. 1921. $2.00. Written for: Teachers of agriculture, training farm boys as scientific farmers, not as specialists.

Special contribution: Puts forward the project method as the most efficient method of teaching agriculture. Topics treated: History of agricultural education; Special attention is given to the Smith-Hughes Bill and its effect upon agricultural education; Values and methods of handling the Home Project are given; Discussion on "Planning the Lesson" and some very good suggestions in the way of outlined lessons are given; Field trips and laboratory work are presented in brief; Courses for the four different years in agriculture, with an introductory treatment of agriculture in the first year—2nd, poultry—3rd, animals—4th, management; Farm mechanics and co-operative organizations are emphasized in the latter part of the book.

4. **Agriculture in the High School:** 191 pages. Henry N. Goddard, High School Inspector of Agriculture. Wisconsin State Department of Education. 1917. Written for: Teachers of Agriculture in State of Wisconsin.

Special contribution: Course of study for agriculture in combination with other subjects. Topics treated: Historical sketch and text of laws relating to agriculture; Requirements —Administrative and legal; Courses of study; Practical projects; Necessary equipment; Agriculture for the grades; Agricultural literature.

5. **Materials and Methods in High School Agriculture:** 385 pages. Wm. Granville Hummell, University of California. Macmillan Company. 1913. $1.80. Written for: Persons interested in introducing agricultural courses into high schools.

Special contribution: Shows how a teacher's influence may cause agricultural development in a community. Emphasizes need for trained teachers. Topics treated: Gives the history of agriculture in the high school curriculum, the reasons for it and its place there; Necessary equipment and methods; Various branches of agri-

culture; Outlines the fourth year course and presents the matter of farm management; Discusses the school farm; Gives the qualifications necessary for a high school teacher of agriculture.

6. **Means and Methods of Agricultural Education:** 273 pages. Albert H. Leake, Inspector of Manual Training and Household Science, Ontario, Canada. Houghton Mifflin Co. 1915. $2.50. Written for: Teachers in rural communities and all who do not see their dependence on agriculture.

Special contribution: Shows the need for development in all phases of rural life and how to meet these needs. Topics treated: A statement of the development and present status of rural life; The problem of rural school organization; The need for agricultural high schools; The agricultural college and institute as aids to the farmer; The place and work of the woman on the farm; The training of agricultural teachers.

7. **The Teaching of Agriculture:** 236 pages. Aritas W. Nolan, University of Illinois. Houghton Mifflin Co. 1918. $1.80. Written for: Teachers of elementary and secondary schools.

Special contribution: Recommendations concerning the aim, scope of work, principles, materials, and methods to be used in teaching agriculture. Topics treated: Nature study as preceding agriculture; Elementary agriculture and boys' and girls' club work; High school agriculture; The teacher of agriculture; Vocational agriculture; Suggestions for farm, home and community survey; Suggestions for laboratory equipment; Smith-Hughes law and vocational agriculture in secondary school.

8. **Vocational Agricultural Education:** 468 pages. R. W. Stimson, State Supervisor of Agricultural Education, Mass. Macmillan Company. 1919. $2.00. Written for: Vocational agricultural supervisors and instructors.

Special contribution: Authoritative source book on Massachusetts home-project plans. Topics treated: Home-projects, adaptability, experimental proof and needs; Project-study, bibliography, books, bulletins and magazines; Massachusetts system, requirements and advantages; Suggestions to those responsible for administration and instruction; What has been done and what can be done.

9. **How to Teach Agriculture:** 434 pages. Ashby Storm and Harry Davis, University of Minnesota. J. B. Lippincott Company. 1921. $3.00. Written for: Teachers of agriculture and those preparing to teach that subject.

Special contribution. Gives methods of teaching agriculture, handling various branches in different ways. Topics treated: How to organize for teaching agriculture; How to manage the teaching of agriculture; Methods of teaching agriculture; How to teach agronomy; How to teach animal husbandry; How to teach dairying; How to teach poultry husbandry; How to teach horticulture; How to teach farm mechanics; Engineering and shopwork; How to teach farm management; Management of soils and fertilizers; Use of charts, slides and films; Community work; How to conduct land laboratory; Equipment for teaching agriculture; Home projects.

FOR TEACHERS OF ART

1. **Design in Theory and Practice:** 268 pages. Ernest A. Batchelder, Batchelder Tile Works, Los Angeles, California. Macmillan Company. 1916. $2.20. Written for: Teachers and students.

Special contribution: The sole purpose here is to make the worker think in terms of design. Trains in judging design values. Topics treated: The utilitarian basis; Elementary and esthetic principles; Construction designing; Materials; Tools and processes; Refinement of proportions; The play impulse; The ideas and nature; From the parts to the whole; From the whole to the parts; Lines of study.

2. **Art Composition:** 128 pages. Arthur Wesley Dow, Teachers College, Columbia University. Doubleday, Page

and Company. 1922. $4.00. Written for: Use of students and teachers.

Special contributions: To set forth a way of thinking about art founded upon composition, or the putting together of lines, masses and colors to make a harmony. Art should be approached through composition rather than through imitative drawing. Topics treated: (a) The line drawing—Japanese materials and brush practice; (b) Principles of composition—ways of creating harmony; (c) Line-composition in squares and circles, composition in rectangles, landscape composition, composition in representation; (d) Notan—harmony building with dark and light, textile patterns and rugs, two values landscapes, two values Gothic sculpture Japanese design books, three values landscape and pictures; (e) Color-color theory, color derived from Notan; (f) Composition—in design and painting.

3. Theory and Practice of Teaching Art: 73 pages. Arthur Wesley Dow, Teachers College, Columbia University. Teachers College, Columbia. 1912. $1.12. Written for: Students and beginning teachers of Art.

Special contributions: Mr. Dow's original method of presenting and teaching art with his theory. Topics treated: Purpose and method of teaching art; (1) Academic; (2) Synthetic; The art language; Courses; Spacing and proportion; Line; Principles of design; Notan or dark and light; Values (three or more); Colors (theory and practice); Applications of art principles; Art subjects for lessons from kindergarten through high school.

4. How to Show Pictures to Children: 132 pages. Estelle M. Hurll, Author of Riverside Art Series. Houghton Mifflin Company. 1914. $2.00. Written for: Teachers and Mothers.

Special contribution: Answers some theoretical questions concerning the hows, whys and what-abouts of pictures; Offers practical suggestions about the showing of pictures; Supplies information about the most desirable picture material for children. Topics treated: The child and the picture; How the picture is made; How to make pictures tell stories; Use of pictures in the schoolroom; Animal pictures, story pictures, pictures of children; Games and practical suggestions to the mother.

5. Freehand Perspective and Sketching: 175 pages. Dora Miriam Norton, Instructor in Art, Pratt Institute. The Cambridge University Press. 1908. Written for: High School, normal school, technical school and college students—also instructors of such schools.

Special contribution: Provides a comprehensive course in perspective, applicable to immediate use for students and instructors of art. Topics treated: Study of the ellipse and cylindrical objects; Straight line objects; Drawings of a house by type forms; Various problems for original study.

6. A Book on the Art of P's and Q's: 108 pages. Sallie B. Tannahill, Columbia University. Doubleday, Page and Co. 1923. $4.00. Written for: Teachers of art interested in letter arrangement.

Special contribution: Based on art principles as given by Arthur W. Dow. Topics treated: Begins letter arrangement with the capital. Right spacing, good proportion, rhythm, and color are shown in their relation to lettering. Designs are drawn from many sources using wave, bird, and flower patterns.

FOR TEACHERS OF COMMERCE

1. The Factors of Shorthand Speed: 194 pages. David W. Brown, Official Reporter of U. S. House of Representatives. Gregg Publishing Company. 1910. 75c. Written for: All shorthand writers.

Special contribution: Long considered a "Shorthand Classic."

2. The Teaching of Handwriting: 155 pages. Frank N. Freeman, University of Chicago. Houghton Mifflin Co. 1914. 75c. Written for: Teachers and supervisors of penmanship.

Special contribution: Contains scientific treatment of psychology, physiology, hygiene, and pedagogy of handwriting. Topics treated: Psychology

of handwriting; Problems in teaching of writing; Problems of the administrator; Standards of attainment in each of the grades; Five large writing charts in the appendix.

3. Making Shorthand Teaching Effective: 18 pages. John R. Gregg, Pres. Gregg Publishing Company. Gregg Pub. Co. 1921. 20c. Written for: Teachers of shorthand (a paper read before the Eastern Commercial Teachers' Association.)

Special contribution: Accentuates quick and accurate teaching on the part of pupils from the very beginning, urging more attention to speed, or at least placing speed on a par with accuracy—from the start. Topics treated: This one idea—teach correct habits from the beginning, and at the same time keep the idea of rapid execution ever before the pupil.

4. The Teaching of Shorthand: 115 pages. John R. Gregg, Pres. Gregg Pub. Co. Gregg Pub. Co. 1916. 75c. Written for: Young teachers of shorthand, being a series of five addresses delivered by Mr. Gregg before various commercial teacher organizations throughout the United States.

Special contribution: An inspiration to young teachers, creating incentive to the accomplishment of a worthy ideal — "Making Shorthand Teaching Effective". Topics treated: Lecture No. 1 deals with the minute detail involved in the teaching of shorthand and the very great importance of a personal interest on the part of the teacher toward the pupil. Lecture No. 2—"Art of Teaching"—discusses the mental operations, the complex mental and manual acts of receiving, remembering, and recording all at once, gives suggestions for training such a memory; attaches value to shorthand as a cultural subject. Lecture No. 3—"Tricks of the Trade"—stresses the importance of one's being able to do what one professes to teach and the equal importance of not doing it so well as to discourage pupils. Lecture No. 4—"Efficient Stenographers" — discusses stenography as a profession and the technique and general qualifications of a good stenographer. Lecture No. 5—shows how modern efficiency principles may be applied to shorthand.

5. Measurement of Achievement in Shorthand: 118 pages. Elmer R. Hoke, Lebanon Valley College, Annville, Pa. Johns Hopkins Press. 1922. $1.50.

6. Teaching Business Subjects in the Secondary School: 303 pages. Conner T. Jones. Ronald Press Company. 1924. $2.00. Written for: Commercial teachers and students of Commercial Education.

Special contribution: Presents a comprehensive view of the present situation in secondary school business education. Topics treated: Business education in the secondary school; Content, sequence, and variations of commercial courses in secondary schools; Qualifications of commercial teachers; Correlation of secondary and collegiate business education; Business arithmetic; Penmanship; Bookkeeping —the account method; Bookkeeping—the balance sheet method; Typing; Shorthand; Training for reporting; Office practice; Business English and correspondence; Business law; Economic and commercial geography; Economics; Salesmanship; Extension business education; Business education of the academic and technical student.

7. Psychology of Business. 232 pages (November 1923 issue of "Annals" of the American Academy of Political and Social Science.) Editor: Clyde King. American Academy of Political and Social Science, $1.00. Order from: American Academy of Political Science, Rumford Building, Concord, N. H.

Topics Treated: Human nature in business; Applying psychology to business; Job analysis for employment purposes; Psychological tests in industry; Factors affecting human efficiency; Research methods in advertising; Psychology in salesmanship; Psychology of saving; Psychology in the service of the life insurance business; The function of psychology in the school of business administration.

8. The Teaching of Arithmetic: 487 pages. N. J. Lennes, University of

Montana. Macmillan Company. 1923. $2.00. Written for Teachers of arithmetic.

Special contribution: Contains general principles of education and their application in teaching arithmetic. Topics treated: General problems bearing on the teaching of arithmetic; Formal discipline; Methods of learning and teaching; Motivation in the early grades and in the grammar grades; Special problems in teaching arithmetic; The textbooks—their selection and use; Measurement and the results of teaching.

9. Scales for Measuring Special Types of English Composition: 142 pages. E. E. Lewis, University of Iowa. World Book Company. 1921. $1.36. Written as a doctoral dissertation.

Special contribution: Gives the original data upon which scales are made for measuring the quality of order letters, letters of application, social letters of a narrative type, social letters of a problematic type and a scale for measuring quality of simple narration. Topics treated: The procedure used in developing the several scales, the tabular data, and the several scales are all included in the treatise.

10. Education for Business: 618 pages. Leverett S. Lyon, University of Chicago. University of Chicago Press. 1922. $3.50. Written for: Prospective teachers and school administrators.

Special contribution: Determines general objectives of business education and indicates solutions of curriculum making problems. Topics treated: Growth and position of business education; Objectives of education for business; Functions of education in a democracy; Modern agencies of education for business; High school commercial-curriculum reform.

11. Commercial Education in Secondary Schools: 216 pages. Cloyd H. Marvin, Southern Branch University of California. Henry Holt and Company. 1922. $1.50. Written for: Commercial teachers and principals of commercial schools.

Special contribution: This book is a real contribution to the field of the literature of commercial education, giving a view of the entire field. Topics treated: Definition and importance of commercial education; Development of the history, general trends, and the present status of commercial education in secondary schools; A valuable survey of commercial education; A statement of the principles of curriculum organization; Part-time and evening school commercial education.

12. The Methods of Teaching Shorthand: 147 pages. Edward J. McNamara. Isaac Pitman and Sons. 1914. $1.00.

13. Retail Selling: 93 pages. Lucinda W. Prince, Head of Prince School of Education for Store Service, Boston, Mass. Gov't Printing Office. 1918. No charge. Written for: Teachers of Retail Selling and boards of education.

Special contribution: Definite plan for establishment of retail-selling courses in High School and for cooperation with stores and training of teachers for same. Topics treated: Establishment of retail selling courses in public schools; Need for training in retail-selling; Opportunities in retail business; School credit for store experience; Plan for organization; Outline of courses Part-time education; Evening school; Merchants' part; Training of teachers.

14. Commercial Education: 67 pages. F. G. Nichols, Federal Board for Vocational Education. Gov't Printing Office. 1919. Written for: Principals, teachers and boards of education.

Special contributions: Shows how to make the most out of Commercial education and to take advantage of provisions of Smith-Hughes law. Topics treated: Organization of commercial education; Full-time commercial courses; Part-time courses; Continuation-school; Evening school courses; Administration of commercial education.

15. The Literature of Business: 506 pages. A. G. Saunders, University of Illinois, and H. L. Creek, Purdue University. Harper and Brothers. 1920.

$2.25. Written for: Students of business writing.

Special contribution: Gives fifty selections from the best of current literature of business, each written by experts. Excellent material for work in business English. Topics treated: Part I—The profession of business; Education; Ethics; Psychology; Employer and employee; Biography; Success. Part II—Business letters and principles of business; General claims and adjustments; Credits and collections; Applications for positions; Advertising and salesmanship.

16. Handwriting Efficiency in Junior and Senior High Schools: 55 pages. J. M. Snesrud, Supt. of Schools, Ortonville, Minn. Gregg Publishing Company. 1921. 20c. Written for: Curriculum makers, principals, superintendents and teachers of penmanship and Gregg shorthand.

Special contribution: Shows the relation of longhand to shorthand and how a development of shorthand skill early in the course leads to far more effective results in all the individual's education. Topics treated: Standards of speed and legibility; The inefficiency of longhand; The possibility of teaching Gregg shorthand with Palmer long hand; Why Gregg shorthand is better suited to complement Palmer long hand than any other system; A comparative study of long and shorthand; Linking up the teaching of long and short-hand—75% of time to shorthand, 25% to long-hand; The practical aspects of introducing shorthand alongside longhand.

17. Social Studies in Secondary Schools: 117 pages. Commission on Correlation of Secondary and Collegiate Education with particular reference to Business Education. University of Chicago Press. 1922. $1.10. Written for: Prospective teachers and principals.

Special contribution: Contains a proposal of a program of studies for the Junior High School and social justification of business education. Topics treated: Social studies in the business curriculum; Actual position of social studies in secondary commercial curricula; What the collegiate schools of business do by way of correlation; The administrative reorganization of our school system; Proposals of the commission; Bibliographies.

18. Methods of Teaching Typewriting: 144 pages. Rupert P. SoRelle, Author of "Rational Typewriting" and "Office Training for Stenographers." Gregg Publishing Company. 1919. $1.50. Written for: All teachers of touch typewriting.

Special contribution: To stimulate teachers of typewriting everywhere to strive to develop methods of teaching to the highest possible point of efficiency. Topics treated: Factors of interest value; Teaching methods; The technique of typing; Outline and suggestions for rational typewriting; Keys to constructive exercises; Outline for Medal of Honor course; Suggestions for handling single keyboard edition.

FOR TEACHERS OF ENGLISH

1. Allen's Synonyms and Antonyms: 482 pages. F. Sturgess Allen, late General Editor of Webster's New International Dictionary. Harper and Brothers. 1921. $3.00. Written for: All students of English.

Special contribution: Especially helpful in teaching composition because of the ease with which pupils can use it.

2. The Teaching of English Grammar: 67 pages. F. A. Barbour, State Normal College, Michigan. Ginn and Company. 1902. Written for: Elementary and secondary school English teachers.

Special contribution: Desires to make the teaching of grammar less mechanical—less a matter of memorizing rules and more a matter of inductive reasoning. Topics treated: History of English grammar teaching (emphasis placed on the modern trend of teaching grammar); Descriptive and scientific grammar; Purpose and method in teaching grammar; False syntax.

3. Talks on Teaching Literature: 243 pages. Arlo Bates, University of Illi-

nois. Houghton Mifflin Company. 1906. $1.30. Written for: Teachers of literature in secondary schools.

Special contribution: Makes for realization of the value of literature. Topics treated: What literature is and why we study it; Methods of study; The inspirational use of literature; The value and study of the classics; Contemporary literature and its place.

4. Teachers Outline for Studies in English: 174 pages. Gilbert Sykes Blakeley, Morris High School, New York City. American Book Company. 1908. 75c. Written for: Teachers of English of secondary schools.

Special contribution: Emphasizes the fact that ultimate aim in teaching of English is to create desire on part of pupil to read; Gives plans for study of five types of literature. Topics treated: Teaching of novel; Teaching of narrative poetry; Teaching of lyric poetry; The drama; The essay; Practical plans are given for arousing class interest through preparation of class work, recitation period, study of the book as a whole.

5. The Teaching of Oral English: 214 pages. Emma C. Bolenius, Central High School, Newark, N. J. J. B. Lippincott Company. 1914. $1.40. Written for: Teachers of English and History.

Special contribution: Contains interesting new methods of conducting oral composition classes in both English and History. Topics treated: One-minute talks" with beginners; "One-minute talks" with older students; What to avoid; Choice of a subject; The debate in English and history; Use of the symposium in English classes; A mythological symposium; Oral composition in history; The history club; Organizing a government as a class exercise.

6. Oral English: 388 pages. John Brewer, Harvard University. Ginn and Company. 1916. $1.48. Written for: Students and teachers of English.

Special contribution: Furnishes the pupil with detailed exercises and topics of everyday life. Topics treated: How to make and how to do; Argument for beginners; The Speaker's appearance before an audience; Improving the vocabulary; Narration; Description; Simple business talks; Style in oral composition; Explanations; Good use of the voice; Speeches for special occasions (the announcement, the nominating speech, presentation and response). Additional talks and exercises (impromptu talks, etc.); Argument and debate; Parliamentary law; Appendices: Arranging and conducting debates; Propositions; Plan for mock trial; National conventions, etc.

7. The Teaching of English in Elementary and Secondary Schools: 380 pages. Carpenter, Baker and Scott; Baker—Columbia University; Scott—Michigan University. Longmans, Green and Company. 1903. $1.90. Written for: Teachers of English in secondary and elementary schools.

Special contribution: Gives opinions of many leading men of the time on such questions as place of grammar in the curriculum, time to be devoted to literature, importance of rhetoric, etc. The training of the teacher is included. Topics treated: Study of the mother tongue; English in elementary education; English in secondary education; The course of study; The training of the teacher; The philosophy of the assignments; Essay correcting.

8. The Teaching of English: Percival Chubb, Prin. of High School, New York. Macmillan Company. 1902. $1.60. Written for: English teachers.

Special contribution: Emphasizes the need for the unification of English work from the earliest to the latest stage of progression. Topics treated: Part I—The Elementary School—The movement for the reform of English studies; Limitations of the school in dealing with illiteracy; Early formative phases, influences and habits in the kindergarten; Learning to read and write; Reading in the primary grades; Composition, oral and written, in the primary grades; Reading; Composition; Grammar and language work in the grammar grades. Part II—The High School — General aims; Characteristics and needs of the adolescent period; Literature in the high school—plans and materials; Methods of treat-

ment; Composition in the high school; Versification in the high school; The question of formalism in method; Ideals and aims; Criticism of prevailing practices.

9. How to Produce Amateur Plays: 144 pages: Clark, Barret H., Literary Editor Samuel French Publishing Co., N. Y. Little, Brown and Company. 1917. $1.75. Written for: Producers of amateur plays.

Special contribution: Practical suggestions for stage lighting, setting and construction. Topics treated: Choice of play; Organization of group; Choice of cast; Steps in rehearsals; Stage; Lighting;Scenery; Costumes; List of plays; Notes on royalties; Makeup art.

10. Eighteenth Yearbook of the National Society for the Study of Education: Part II: 123 pages. Committee on Economy of Time in Education. Public School Publishing Co. 1919. $1.10.

Special contribution: Fourth report including (a) principles of method in teaching reading, summarizing the work which had been previously done concerning economy and efficiency in reading. A bibliography of references on the subject is included. (b) Principles of method in teaching spelling which aims to promote economy in the learning of spelling and warns against dangerous "short cuts"; compares suggestive bibliography on spelling.

11. The Teaching of Poetry in High School: 184 pages. A. H. R. Fairchild, University of Missouri. Houghton Mifflin Company. 1914. $1.20. Written for: High School English teachers.

Special contribution: Gives suggestions on teaching high school pupils how to study and appreciate good poetry. Topics treated: The problem; Elements and factors involved; The teacher, the pupil, the poetry; Some practical work; Some formal elements; When and how to begin the study of a poem; Memorizing; Why study an evil or failing character; Possible applications of a poem; Composition and literature; Outside reading; Review and examinations; The enjoyment of poetry in its relation to hard work.

12. Expressive English: 463 pages. Fernald, James C., Montclair, N. Y. Funk and Wagnalls. 1918. $1.90. Written for: High School English teachers and persons interested in improving their ability to write good English.

Special contribution: Gives definite suggestions for enlarging vocabulary, for choosing the exact word to fit the meaning intended, for improving sentence structure and for using figures of speech. Topics treated: The simplicity of English; Power of English; English treasury of words; World literature in English; English synonyms; Dictionary and how to use it; English grammar; Improvement of vocabulary; Difficulties in English; Clearness of style; Art of brevity; Figures of speech; Inventive art in speaking and writing; Constructive literary work; Life—the supreme achievement.

13. Twenty-fourth Yearbook N. S. S. E.: Part I: Report of the National Committee on Reading. 356 pages. W. S. Gray and others, Gray at University of Chicago. Public School Publishing Co. 1925. $1.50. Written for: Educators interested in the scientific study of reading.

Special contribution: Gives most carefully considered recommendations at present in the field of reading. Topics treated: Reading activities in school and social life; Essential objectives of instruction in reading; A modern program; Development of a meaningful vocabulary; Reading and content studies; Literature; Appropriate reading materials; Provision for individual differences; Reading tests; Diagnosis and remedial work; Ways and means of putting an improved reading program in operation; Outstanding recommendations.

14. Writing for Print: 252 pages. H. F. Harrington, Northwestern University. D. C. Heath and Company. 1922. $1.30. Written for: Junior high school students interested in journalism, high school teachers of journalism, staff

and sponsor of a High School newspaper.

Special contribution: Gives definite suggestions as to the best methods of journalism and specific directions for publishing a school newspaper. Topics treated: The reporter and the news; Simple news items; Building the news story; Football; Speeches; Interviews; Feature and human-interest stories; The reporter's use of words; The editorial; Making the school newspaper and copy-reading; Head-writing and make-up; Guide-posts for teachers; Style book for a High School newspaper and dictionary of common newspaper terms.

15. Teaching English in Junior High Schools: 142 pages. Hattie L. Hawley, High School of Commerce, Worcester, Mass. Houghton, Mifflin Co. 1924. $1.20. Written for: Junior high school teachers of English.

Special contribution: Contains interesting methods and devices for vitalizing English, especially composition, through: Devices to cultivate power; Devices to cultivate appreciation; Devices to teach fundamental facts.

16. The Reorganization of English in Secondary Schools: 181 pages. J. F. Hosic, Teachers College, Columbia University. U. S. Department of the Interior. 1917. 20c. Written for: English teachers and administrators of secondary schools.

Special contribution: Presents the latest steps in the development of the teaching of English in secondary schools; sets forth definite aims to be realized. Topics treated: History of the study of English in American secondary schools; The movement for reorganization; The point of view of the committee; Aims of the English course; Report on composition in the seventh, eighth and ninth grades; Report on literature in the seventh, eighth and ninth grades; Report on composition in the tenth, eleventh and twelfth grades; Report on literature in the tenth, eleventh and twelfth grades; Report on oral expression; Report on business English; General reading; Report on the library and its equipment; Administrative problems; The organization of the English course.

17. Twentieth Yearbook of the National Society for the Study of Education: 172 pages. Ernest Horn, University of Iowa. Public School Publishing Company. 1921. $1.00. Written for: Teachers of reading.

Special contribution: Shows that silent reading should be given relatively more time than is given to oral reading; tells how to assist pupils who are having trouble in school due to their inability to read. Topics treated: Factors affecting results in primary reading; Controlling factors in the measurement of silent reading; Individual difficulties in silent reading; Development of speed; Motivated drill work for third grade; The effect of a single reading; Outlining and summarizing compared with re-reading as methods of studying; Measuring comprehension of content material; Vocabularies of ten first readers; Contents of Readers; Exercises developed at Detroit for making reading function; Silent Reading exercises developed at Denver, Cedar Rapids, Racine and Iowa City.

18. English Composition: 172 pages. Earl Hudelson, University of Minnesota. Public School Publishing Co. 1923. Written for: Teachers of English in High Schools. 75c. (Appeared as the Twenty-second Yearbook of the N. S. S. E.)

Special contribution: Sets forth in the aims of teachers of composition, methods employed in realizing these aims and objective scales for measuring ability. Topics treated: Aims and methods of teaching composition; What teachers consider in composition; Need for scientific measurements of composition; Measurements of abilities; Thirty-two assignments that were sent out with directions for administering.

19. A Course in Journalistic Writing: 424 pages. Grant Milnor Hyde, University of Wisconsin. D. Appleton and Company. 1922. $1.60. Written for: Senior high school students; High School and college teachers of journalism.

Special contribution: Emphasizes the use of newspaper writing as a stimulus to student effort in composition writing rather than the purely vocational side of journalistic writing. The social service aim of journalism is also stressed. Topics treated: Character and style of journalistic writing; Narration; Paragraphs; Human interest stories; Sentences; Description; Use of words; Exposition; Form of manuscript; News narratives; News value; Reporting speeches; Interview stories; Editorials; Reporting dramatics; Musical events; Book reviews; Publicity material; Practical problems of student publications; Management and technical problems.

20. Silent Reading: 160 pages. Charles H. Judd and G. T. Buswell, University of Chicago. University of Chicago Press. 1922. $1.50. Written for: Educators interested in a scientific study of reading habits.

Special contribution: Gives diagrams showing length of eye span for individuals on different types of reading. Topics treated: Silent reading more rapid than oral reading; Oral reading fastens slowness on pupil; Mental processes differ; Eye movements different in reading for various purposes; Same true of mental attitudes; Different nervous tension—physical feature; Eye movement as direct measure of mental state as pulse is of heart beat; Motor impulses flow from different central nervous situations.

21. Outline Guide to Shakespeare: 326 pages. Paul Kaufman. The Century Co. 1924. $1.75. Written for: Teacher and reference.

Special contribution: Gives in condensed form quantities of material required by the English teacher in the study of Shakespeare. Topics treated: A brief synopsis of each plan is given; Chapter on each concerning the sources, setting, time, and characters of the plays as well as on each of the grammar, vocabulary, and pronunciation of Shakespeare; Closing chapter on past and present Shakespearean actors particularly valuable for general information.

22. The Teaching of English: 262 pages. Paul Klapper, College of the City of New York. D. Appleton and company. 1915. $1.90. Written for: Elementary school teachers of English.

Special contribution: Gives splendid suggestions for the teaching of both formal and informal composition in all grades. Topics treated: Informal composition in the first four years; Composition in the grammar grades; Correction of written composition; How to vitalize composition exercises; Teaching of spelling; The meaning and use of new words; Memorization and memory gems; Dictation; The values of formal grammar; Principles governing the teaching of grammar.

23. English for Immediate Use: 492 pages. Frederick Houk Law, Stuyvesant High, New York City. Scribner's Sons. 1924. $1.40. Written for: Teachers and pupils in secondary schools.

Special contribution: Presents purposeful sequence that enables class to move forward rapidly. Topics treated: Sentence structure; Grammar; Drill exercises; Aim is direct contact with pupil activities in the teaching of English.

24. English Composition as a Social Problem: 202 pages. Leonard, Sterling Andrus, Horace Mann School-Teachers College, Columbia University. Houghton Mifflin Company. 1917. 75c. Written for: Teachers of English composition.

Special contribution: Offers an illuminating analysis of the faults in the teaching of English composition and points out the remedy. Topics treated: The sources of composition projects in child-activities; The social group as an agent in expressional development; The organization of ideas; Evolution and attainment of expressional standards.

25. Scales for Measuring Special Types of English Composition: 144 pages. E. E. Lewis, Supt. of Schools, Rockford, Ill. World Book Company. 1921. $1.13. Written for: Teachers of English Composition.

Special contribution: Gives five new scales for measuring attainment and progress of pupils in letter writing with directions for using each. Topics treated: Reviews of the principal features of the Hillegas Scale; Thorndike extension of supplement to the Hillegas scale; Ballou or Harvard-Newton composition scale; Breed and Frostic scale; Willing composition scale; Hudelson English composition scale plus five new scales for measuring the quality of ordinary letters; Letters of application; Social letters (narrative type) and social letters (problematic type) with directions for using each.

26. Supervised Study in English: 218 pages. Anne Laura McGregor, Washington Junior High School, Rochester, N. Y. Macmillan Company. 1921. $1.40. Written for: Junior High School English teachers.

Special contribution: Gives technique of supervision so planned that evening hours of students need not be spent in preparation of lessons. The author makes provision for individual differences by advocating minimum, average and maximum assignments. Topics treated: General principles of supervised study; Special problems; Oral English; Individual differences; Lesson plans in oral composition and corrective English; Literature; Application of supervised study; Composition; Grammar and the use of projects.

27. Standards in English: 193 pages. John J. Mahoney, State Normal, Lowell, Mass. World Book Company. 1918. $1.20. Written for: Teachers of English through Grade 8.

Special contribution: Gives a course which is definite in its aim and the requirements grade by grade. Sets forth the grade standards so as to waste as little time and energy as possible. Topics treated: What we mean to teach; The aim of this course in English; Oral English (subdivided); Written language — paragraphs, spelling, clean-cut sentences; Composition subjects; Correction of composition; Copying and dictation as aids on teaching composition; Outline of work for grades through the eighth; Literature outline by grades.

28. A Manual for Writers: 225 pages. J. M. Manly and J. A. Powell, University of Chicago. University of Chicago Press. 1913. $1.25. Written for: Authors and all who need guidance in standard English usage.

Special contribution: Gives standard usage in all matters of written English. Topics treated: English composition; Grammatical notes (with a list of "pitfalls in diction"); Spelling (with rules for abbreviating and compounding words); Capitalization; Punctuation; The use of italics; Letter writing (with forms); Hints on preparation of manuscript for publishing; Illustrations; Stages through which a book passes in the making; Typographical practices and terms; Miscellaneous information (chiefly publication and copyright).

29. Art of Speech: 372 pages. Anna Morgan, School of Expression, Chicago, Ill. A. C. McClurg and Company. 1909. $1.50. Written for: Those who seek greater refinement in speech.

Special contribution: Emphasizes the fundamentals of oral expression as breathing and voice culture. Topics treated: Breathing; Voice; Poise; Our Language; Platform conduct; Diction; Pronunciation of foreign words; The conduct of arms and the body; The development of the drama today; French drama; Spanish drama; German drama; English drama.

30. Silent Reading: 289 pages. John A. O'Brien, University of Illinois. Macmillan Company. 1921. $1.40. Written for: Grade and High School teachers.

Special contribution: Gives the factors influencing the rate of Silent Reading and definite methods of training to improve. Topics treated: Resumé of previous investigations; The problem; Factors influencing the rate of silent reading; Training in rapid silent reading; Training to decrease vocalization; Training in perception; Statement of procedure; Statement of results; Interpretation of results; Photographic record of eye-movements during reading; Summary of conclusions.

31. Self Cultivation in English: 50 pages. G. H. Palmer, Harvard Uni-

versity. Houghton Mifflin Company. 1908. 40c. Written for: Students and teachers of English composition.

Special contribution: Creates an interest in and an optimistic attitude toward the art of learning to write and speak well. Topics treated: English as a tool; Sound speech as the basis of literary power; How to remove the drudgery of writing; The artistic purpose of writing is involved in the moral; The social purpose; Leaning upon the subject; Association with good speakers and writers.

32. Abilities and Disabilities in the Use of English: 51 pages. H. E. Potter, Gustine High School, Gustine, California. University of California Press. 1922. 50c. Written for: Teachers of English in High Schools, particularly those of California High Schools.

Special contribution: Explains a definite method of finding the errors made by the pupils of any high school. Eliminates "guess work" in the teaching of composition and grammar. Topics treated: Other error studies; Abilities in handwriting and in written composition; Sentence structure; Grammar; Diction; Organization; Punctuation; Miscellaneous errors; Summary of findings; (All findings concerned were taken from the written compositions of entering freshmen in the University of California.)

33. English Problems in the Solving: 232 pages. Sarah E. Simons, City Schools, Washington, D. C. Scott, Foresman Company. 1920. $1.50. Written for: Secondary school teachers.

Special contribution: Attacks the root of the greatest difficulty in every phase of the teaching of English and suggests an excellent remedy. Topics treated: Junior high school; Definition and aims; Minimum essentials for junior high school English; The separation of composition and literature; The problem of the start—the assignment of correlation; Fundamentals; The problem of grammar, punctuation, spelling and vocabulary; Oral and written expression; The problems of better speech; Written work; The letter; Theme correcting; Measurement of results; The choice of literature; The teaching of literature; The problem of reading; Imitation; Dramatization; Some special problems; American literature; The magazine; The world war and the English class; The history of literature; The teaching of poetry; The drama; The teaching of certain classics.

34. The Reading Process: 267 pages. William A. Smith, University of California-Southern Branch. Macmillan Company. 1922. $1.40. Written for: Teachers and supervisors of reading.

Special contribution: Gives an explanation of the factors that enter into reading, especially silent reading. Topics treated: Language; The evolution of written language; Spelling; Teaching beginners to read; Analysis of reading process; Development and variation of reading ability; Comparison of oral and silent reading; The content of readers; Standard tests for measuring reading ability.

35. The Meaning of Literature: 340 pages. George Sprau, Western State Normal School, Kalamazoo, Michigan. Charles Scribner's Sons. 1925. $1.40. Written for: Teacher, if used in high schools.

Special contribution: Endeavors to aid the teacher to a fuller appreciation of literature by giving directly and simply a discusison of the history and technique of the essay, lyric, epic, ballad, novel, short story, and written drama. Gives a bibliography for each of these. Great value of the book lies in the fact that these forms are included in one volume, easily handled.

36. Silent and Oral Reading: 298 pages. Clarence R. Stone, Harris Teachers College, St. Louis, Missouri. Houghton Mifflin Company. 1922. $2.00. Written for: Teachers of reading.

Special contribution: Discusses materials and methods in reading, based on recent scientific investigations. Topics treated: Contributions to reading problems from psychological and educational research; Teaching of reading in primary, intermediate and upper grades; Appreciation; Memorizing; Securing

audience situation in oral reading; Silent reading lessons; Reading tests; Individual differences and special group and individual instruction.

37. How Much English Grammar: 215 pages. Martin J. Stormzand and M. V. O'Shea, University of Southern California and University of Wisconsin. Warwick and York. 1924. $2.00. Written for: Teachers interested in the best means of securing good English usage.

Special contribution: Gives suggestions of practical value based upon quantitative data to all concerned in planning and teaching language and grammar courses. Topics treated: Need for revised grammar courses; Clauses; Verbs; Nouns and pronouns; Adjectives; Adverbs; Relation between use and error in language courses; Plan for revision of present day practice.

38. Teaching of English in High School: 383 pages. Clarence Stratton, Director of English in Cleveland, Ohio. Harcourt, Brace and Company. 1923. $1.80. Written for: Teachers of English in High School.

Special contribution: Presents methods and aims of English teaching, gives definite course of study for each semester. Topics treated: Aims; Teaching of prose fiction; Content of poetry; Form of poetry; Drama; Essays; Reading; Judgment and appreciation; Ability to write; Ability to speak; Courses of study; Questions and exercises; Tests and scales; Bibliography.

39. The Teaching of English in Secondary Schools: 365 pages. Charles Swain Thomas, High School, Newton, Mass. Houghton Mifflin Company. 1917. $2.25. Written for: Teachers of English in High Schools.

Special contribution: Harmonizes the traditional and modern points of view in the teaching of English, giving aims and methods. Topics treated: Aims of English; How much grammar should be taught; Composition and its essentials; Cooperation with other departments; Choice of literary material; Teaching of poetry, the lyric, ballad; Teaching of prose, essay, novel, etc.; Outside reading; Extra-class activities; Adjustment of the English course; Training of the teacher.

40. English Classics: 298 pages. Trent, Hansen, Brewster—Trent, Columbia University; Hansen, Mechanical Arts High School, Boston; Brewster, Columbia University. Ginn and Company. 1911. 88c. Written for: Students and teachers of English.

Special contribution: Gives supplementary material and suggestions as to methods for teaching each of the classics of English literature. Topics treated: Novels and romances; Poems; Narrative and descriptive prose, exclusive of the novel; Descriptive and lyric poetry; Expository and argumentative prose. (Each classic is treated in detail as to setting, story and incidents, characters, construction and style.)

41. Oral Composition: 403 pages. Cornelia C. Ward, Hunter College High School, New York City. Macmillan Company. 1914. $1.40. Written for: The pupil, but also suggestive for teachers.

Special contribution: Bridges the gap between oral and written English. The rules of oral work which ordinarily are decidedly prosaic are made most attractive to the pupil. Topics treated: Why we should know how to speak; Its place in our lives; Why speech has power; The conditions of good speaking; Preparation; Expression as conditioned by thought; The paragraph, sentence, use of words, etc.; Actual speaking (use of body, voice, enunciation, etc.); Kinds of writing and speaking; Narration; Description; Exposition; Argumentation; Topics and illustrative material; Suggestive outlines for practice; General topics for school assemblies; Topics for oral reports.

42. What Is English: 225 pages. C. H. Ward, Taft School, Watertown, Conn. Scott, Foresman and Company. 1918. $1.50. Written for: Class-room teacher and pupils in secondary schools.

Special contribution: Gives practical suggestions covering difficulties en-

countered in everyday class work. Topics treated: Composition (mistakes and suggested remedies); Study and structure of sentence, paragraph, longer discourse; Intensive spelling; Punctuation; Facts; Practical devices; Themes.

43. The Traditions of European Literature: 669 pages. Barrett Wendell, Harvard University. Scribner's Sons. 1921. $3.50. Written for: Teachers and students of literature.

Special contribution: A masterly survey by centuries of historical and literary traditions which affect literature from Homer to Dante. Topics treated: Traditions of Greece; Traditions of Rome; Traditions of christianity; Traditions of christendom; Traditions of the Middle Ages.

44. Self-help Methods of Teaching English: 294 pages. Julia H. Wohlfarth. World Book Co. 1925. $1.88. Written for: Elementary teachers.

Special contribution: An aid to beginning secondary teachers, and a reminder for experienced teachers. Deals especially with composition work; objectives for each grade, from first through ninth. Topics treated: Chapters III, IV, V, IX, contain helpful suggestions and discussions on the teacher, the textbook and the pupil; Self-help activities; Correct usage; Composition in higher grades.

FOR TEACHERS OF HOME ECONOMICS

1. Problems in Home Economics Teaching: 146 pages. L. F. Bowman, University of Chicago. University of Chicago Press. 1925. $1.50. Written for: All interested in outstanding problems in home economics teaching.

Special contribution: Gives 67 problems designed to supplement textbook material and taken from the experience of the author. Topics treated: Aims and objectives in home economics; The textbook; Project teaching; Clothing and textiles, food and nutrition; Home management; Child care; Community life, etc.

2. Nutrition and Clinical Dietetics: 622 pages. Carter, Howe and Mason, Associates in Clinical Medicine at Columbia University. Lea and Febiger, New York. 1917. Written for: Dieticians and teachers of Dietetics.

Special contribution: Contains an assembly of facts from reliable sources, and may be used as a reference book. Topics treated: Digestion; Foods and their evaluation as foods; Normal feeding of adults and children, and in infancy; Feeding in disease; Special diets; Tables of food values; Tables of weight and measures.

3. Domestic Art in Woman's Education: 274 pages. Anna M. Cooley, Teachers College, Columbia University. Chas. Scribner's Sons. 1911. $1.50. Written for: Those studying the method of teaching Domestic Art in elementary and secondary schools.

Special contribution: Gives the methods of presentation; practical value of domestic art, and its relation to other school subjects. Topics treated: Relation of Domestic Arts to education; Domestic Art in the elementary school; The Relation of Domestic Art to secondary education; Selection and planning; Domestic Art in Higher Education.

4. Teaching Home Economics: 555 pages. Cooley, Winchell, Spore and Marshall, Teachers College, Columbia University, New York. The Macmillan Company. 1919. $1.80. Written for: A help for teachers and for training teachers.

Special contribution: Gives methods of organization, administration, and teaching of Home Economics, with special emphasis upon the adaptation to the needs of the class. Topics treated: The response of womanhood to modern social demands; Response of educational agencies to the needs of women; Development of Home Economics for the needs of the girl; Relation of Home Economics to other subjects; Organization of the elementary and High Schools; Home Economics in the rural schools; Home Economics in other organizations which help the girl; Planning lessons in Home Economics; Management problems; Standards for testing methods of instruction in Home Economics; The

teacher and the supervisor of Home Economics; Utilization of community interest in teaching Home Economics; Equipment for teaching Home Economics; Available literature in Home Economics.

5. Home Economics in the Elementary and Secondary Schools: 327 pages. Agnes Keeth Hanna, University of Chicago. Witcomb & Burrows. 1922. $2.50. Written for: Teachers of Home Economics.

Special contribution: Combines best methods and experiences of teachers in all parts of the country as retold by their students. Topics treated: Part I: The Subject matter and teaching methods of Home Economics; Organization of subject; Methods of teaching; Food; Sewing; Clothing; Household Management; Part II: Pedagogy of Home Economics; Home Economics in its relations to other subjects; Outline of courses in Home Economics.

6. Industrial and Home-Making Subjects for Girls: 45 pages. Kauffman and Furney, New York State Department of Education. G. F. Williams and Son, Inc. 1922. 50c. Written for: Teachers of Vocational Home Economics.

Special contribution: Contains courses of study and projects, designed with the vocational student's viewpoint, rather than the purely educational. Topics treated: Statistics of female employment; Objects of courses; Courses of study; Home projects; Outline of school practice; Subjects for discussion; Lists of materials needed for instruction; Time allotments of subjects; Methods of job analysis; Part-time instruction curricula; Bibliography.

7. The Measurement of Certain Elements of Hand Sewing: 119 pages. Katharine Murdoch, Punahou School, Honolulu. Teachers College, Columbia University. 1919. $2.50. Written for: Supervisors and teachers of sewing.

Special contribution: Contains a provision for the scientific measurement of some elements of sewing. Topics treated: The problem, the data, the scale, faults in sewing; Their analysis and importance; The reliability of measurements of sewing in relation to kind of stitch; Judgments; Number of samples; Character of judges; Kind of products and use of scale; A test of transfer from sewing to "neatness" and to "æsthetic appreciation."

8. Home Economics in American Schools: 122 pages. Trilling, Mabel Barbara, University of Chicago. Dept. of Education, University of Chicago. 1920. $1.25. Written for: Those interested in the construction of a sound scheme for home economics education.

Special contribution: Gives a constructive criticism of the teaching of Home Economics in United States, and suggestions for improvement. Topics treated: Present status of Home Economics through a survey of the subject in the public schools of the United States; How courses in Home Economics are organized; Textbooks, technique and information versus, thinking and appreciation; Evaluation of aims and outcomes; A first step in the reconstruction of Home Economics; New Purposes for teaching;—training powers of thinking and enjoyment; Use of standardized tests to measure the result of instruction; A program for the scientific study of Home Economics.

9. A Manual of Home-Making: 633 pages. Martha Van Rensselaer, Cornell University, Ithaca, New York. Macmillan Company. 1922. $2.60. Written for: Women who are managing households, chiefly rural.

Special contribution: Considers the subject from the viewpoint of the person who is actually to use the knowledge, rather than the instructor;—aid to teachers in making a course practical. Topics treated: Planning and furnishing the home; Care of the house; Heat and light; Stoves; Measurements; and accounts; The laundry; Textiles; Sewing, Millinery, Food values; Menu planning; Marketing; Recipes; Food preservation.

FOR TEACHERS OF INDUSTRIAL ARTS

1. School Credit for Home Work: 181 pages. L. R. Alderman, City Superintendent of Schools, Portland, Oregon. Houghton Mifflin Co. 1914. $1.50. Written for: Teachers of Industrial Arts.

Special contribution: "This book is written in hope that parents, teachers and children may be helped to work together more joyously and harmoniously on the real problems of life." Topics treated: General problem stated; Practical examples of how home work and the school work can be correlated; Honoring home labor; Habit building; Cooperation between teachers and parents; Value of teachers' knowledge of the home conditions; Home credit plans; Rules governing home credit work; Letters from teachers; High school home credit plans.

2. The Vocational Guidance of Youth: 124 pages. Meyer Bloomfield, Harvard University. Houghton Mifflin Co. 1911. 60c. Written for: Teachers, parents and the general public.

Special contribution: Gives important suggestions for the solution of the problems of vocational guidance. Organized effort to secure preparation for guiding agencies described. Topics treated: The choice of a lifework and its difficulties; Vocational chaos and some of its consequences; Beginnings in vocational guidance; Vocational guidance in the public schools; The vocational counselor; Some cautions in vocational guidance; Social and economic gain through vocational guidance.

3. Principles and Methods of Industrial Education: 257 pages. William H. Dooley, Navy Yard Continuation School, New York. Houghton Mifflin Company. 1919. $2.00. Written for: Teachers of Industrial subjects.

Special contribution: Summarizes facts and principles of industrial education. Topics treated: The value of industrial education; Educational needs of the trades and industries; Past training of men in industry; Types of industrial schools; Organization of industrial schools; A survey; Methods of teaching; Courses of study; Manual training versus industrial education.

4. Careers for Women: 576 pages. Catherine Filene, Director Intercollegiate Vocational Guidance Association. Houghton Mifflin Company. 1920. $4.00. Written for: High school and college women.

Special contribution: Gives satisfactory reference work for teachers in directing students. Model for presenting vocational information. Topics treated: Accounting; Advertising; Agriculture; Architecture; Arts and Crafts; Business; Dramatics; Education; Finance; Government service; Health service; Home economic service; Industrial work; Institutional work; Secretarial work; Social work; Literary work; Motion-picture work; Museum work; Music; Newspaper work; Insurance; Law; Library work; cation; Politics; Religion; Scientific work; Personnel work; Physical edu- Specialists; Statistical work; Vocational guidance.

5. Introduction to Vocational Education: 483 pages. David S. Hill, President, University of New Mexico. Macmillan Co. 1920. $2.00. Written for: Educators desiring a brief treatment of the problems of vocational, agricultural, and commercial education.

Topics treated: Meanings of vocational education; Individual and social adjustments; Federal co-operation in vocational education problems in agricultural education in mechanical industries and trades in business and commerce; Practical education for girls and women; Research for education in industry; Applications of psychology to instruction in industry.

6. Vocations for Girls: 139 pages. Mary A. Laselle and Katherine E. Wiley, Instructors in the Lasalle Technical High School, Newton, Mass. Houghton Mifflin Co. 1913. 85c. Written for: Young girls and those responsible for their guidance.

Special contribution: Contains a collection of collateral readings for class that will hold their interest. Definite information in trades that do not require extensive preparation. Topics treated: Salesmanship; Stenography and typewriting; Telephone operator; Factory worker; Cooking; Nursing; Sewing and Millinery; Teacher; Kindergarten; Library work; Domestic service; The girl at home; The vocations for country girls; Vocations plus avocations; The successful girl; Statistics; Famous women workers.

7. Vocational Education: 581 pages. David Snedden, Teachers College, Columbia University. Macmillan Company. 1920. $2.25. Written for: Teachers and supervisors of vocational subjects.

Special contribution: Includes an analysis of meaning, aims, objectives and extent of vocational education. Topics treated: The meaning of vocational education; The social need; The relation of general to vocational education; Principles of method in vocational education; Callings (agricultural, commercial, industrial, home-making, professional); Practical arts; Teacher training; Occupational statistics; Terminology.

FOR TEACHERS OF LATIN

1. A History and Description of Roman Political Institutions: 437 pages. Frank F. Abbott, University of Chicago. Ginn and Co. 1902. $2.00. Written for: Students of Roman life and literature.

Special contribution: Gives historical background for students of Latin. Topics treated: The Patrician city; Supremacy of the nobilitas; Struggle between the democracy and the nobilitas; The period of transition; Attributes of magistracy; The several magistrates; The senate; The people; Establishment of the empire; From Tiberius to Nero; The Flavian emperors; From Nerva to Septimus Serverus; The empire of the third century and reforms of Diocletian.

2. The Common People of Ancient Rome: 290 pages. Frank F. Abbott, University of Chicago. Charles Scribner's Sons. 1911. $2.00. Written for Students of Roman History.

Special contribution: To field of social science, showing similarity of ancient to modern problems of social life and government. Topics treated: Spread of Latin language; Latin of the common people; Poetry of common people of Rome; Origin of realistic Romance among Romans; Private benefactions, effect upon municipal life of Romans; Reflections on corporations and trade guilds; A Roman politician.

3. The Legacy of Rome: 512 pages. Cyril Bailey, Oxford University. The Oxford University Press. 1923. $3.00. Written for: All interested in the cultural contribution of the Roman world.

Special contribution: Gives views of several noted writers through quoted materials. Topics treated: Transmission of the legacy; The conception of empire; Communication and commerce; The science of law, family, and social life; Religion and philosophy; Science; Literature; Language; Building and engineering.

4. Study of Latin and Greek: 237 pages. Lamar T. Beman, Cleveland, Ohio. H. W. Wilson Co. 1921. $1.80. Written for: Teachers and students of Latin.

Special contribution: Collection of best arguments on both sides of controversy over value of study of Latin and Greek. Outlines of debaters' briefs—affirmative and negative. Topics treated: Affirmative Case for the classics; Worth of ancient literature; Value of the classics to students of English; Must the classics go?; Measurements of the effect of Latin; Classics in British education; Value of Latin and Greek; Negative —Value of classics; Liberal education without Latin; Value of studying foreign languages; Education as a mental discipline; Teaching of English; Classical literature through translation; Why I have a bad education; Examples of a dead language propaganda.

5. The Latin Language: 258 pages. Charles E. Bennett, Cornell University. Allyn and Bacon. 1907. Written for: Advanced students of Latin.

Special contribution: Historical development of the Latin language, its sounds, inflections and syntax. Topics treated: Alphabet; Pronunciation; Quantity; Accent; Orthography; The Latin sounds; Inflection; Adverbs and prepositions; Syntax.

6. The Teaching of Latin and Greek in Secondary Schools: 332 pages. Bennett and Bristol, Cornell University. Longmans, Green and Co. 1901. $1.90. Written for: Teachers of Latin and Greek.

Special contribution: Justification for the study of Latin and Greek; Their objectives, and the organization of material; Class instruction. Topics treated: History of high school Latin; Justification of Latin; Texts; Pronunciation; Sight reading and sight translation; Classical authors and their sequence in high school work; General points for emphasis in high school Latin; Composition work; Latin poetry; Greek—Objectives; Pronunciation; Prose writers; Composition; Geography and history; Mythology and art.

7. The Teaching of Latin in Secondary Schools: 170 pages. H. A. Brown, State Normal School, Oshkosh, Wis. State Normal School, Oshkosh, Wis. 1919. Written for: School and college teachers and administrators.

Special contribution: Answers questions with reference to success with which Latin is being taught in secondary schools. Topics treated: General purpose and nature of the investigation; Specific purposes of the investigation; The tests and their application; Development of the tests; The Latin tests; Time devoted to study of Latin; Method in Latin; Value of the study of grammar; Relation between ability to apprehend the meaning of Latin and knowledge of construction; Ability in fundamentals of Latin in relation to time devoted to Latin study.

8. The Syntax of High School Latin: 60 pages. Lee Byrne (Editor). A cooperative study by fifty collaborators. University of Chicago Press. 1918. $0.75. Written for: Teachers of high school Latin.

Special contribution: It aims to furnish a scientific basis for the selection and arrangement of the topics of syntax to be studied in high school. Topics treated: Why syntax is studied; The nature of the reading process; What syntax should be studied; Statistics of syntax in high school Latin; The use of statistical evidence in curriculum making; Illustrative examples classified under grammatical headings; (same examples in the order of their occurrence in the texts).

9. The Classical Investigation: Part I: 305 pages. General report made by the Advisory Committee of the American Classical League. Will be sent free to teachers of classics upon request to Dean West, Princeton University. Princeton University Press. 1924. Written for: Teachers of Latin and Greek.

Special contribution: A summary of results, with recommendations for the organization of the course in secondary Latin and for improvement in methods of teaching. Topics treated: Brief history of the classical investigation; Statistical status of Latin and Greek; Aims or objectives in the teaching of secondary Latin; The content of the course in secondary Latin; Methods of teaching secondary Latin; Comparative records of classical and non-classical pupils; General conclusions and comments.

10. Teaching High School Latin: 126 pages. Josiah Bethea Game, Florida State College for Women. University of Chicago Press. 1916. $1.35. Written for: High school Latin teachers.

Special contribution: Practical manual to meet needs of young teachers of Latin. Topics treated: Latin's immediate service in education; Latin's larger service in education and in life; Classical studies on defensive; Teacher and his subject; The training

of the Latin teacher; English in Latin study; Public testimony to value of Latin Study; The text; 1st year Latin; 2nd year Latin; 3rd year Latin; 4th year Latin; Latin prose; Composition; Latin Bible; Latin hymns and songs; Classroom equipment; Questions with answers; Suggestions.

11. The Latin Language: 618 pages. N. M. Lindsay, Jesus College, Oxford. The Clarendon Press. 1894. $8.35. Written for: Students of Latin philology.

Special contribution: An investigation by comparative philological methods of the Latin language. Topics treated: The alphabet; Pronunciation; Accentuation; The Latin representatives of the Indo-European sounds; Formation of nouns and adjectives; Declension; Parts of speech.

12. Relation of Latin to Practical Life: 124 pages. Frances E. Sabin, University of Wisconsin. Publisher: The author. 1916. Printed by the University of Chicago Press. Written for: The teachers of Latin.

Special contribution: Gives definite answers and illustrations in the form of an exhibit to the question, "What is the practical value of Latin?" Topics treated: An outline giving practical values of Latin; Latin and the English language; English literature; The Romance languages; Language study in general; Mental training; Art; The sciences; The professions; Roman civilization as a basis for our own; Other ways in which the study of Latin makes the world more interesting; Common objections answered; Letters to high school boys and girls; What it means not to know Latin.

13. Value of the Classics: 396 pages. Andrew F. West, Princeton University. Princeton University Press. 1917. Written for: American public.

Special contribution: Gives the opinions of people in all professions in regard to the value of Latin and furnishes statistics answering the questions: "Is Latin dying out in the schools?" and "How do classical students succeed in meeting the various intellectual tests?" Topics treated: American public life; Business; Universities and colleges; Schools; The ministry; Law; Medicine; Engineering; Physical and natural science; Economics; Philosophy; Sociology; Fine arts; Oriental studies; Statistics.

FOR TEACHERS OF MATHEMATICS

1. Teaching Junior High School Mathematics: 135 pages. Harry C. Barber, Supervisor of Mathematics in Public Schools, Newton, Mass. Houghton, Mifflin Co. 1924. $1.20. Written for: Teachers of mathematics.

Special contribution: Treats of the significance of "new mathematics and how it may be successfully taught". Topics treated: Basis for revision of the mathematics curricula; New mathematics in grades seven and eight—arithmetic, geometry, algebra; New mathematics in grade nine—algebra, trigonometry, computation; Demonstrational geometry.

2. Mathematical Education: 139 pages. George L. Carson, Teacher and lecturer in England. Ginn and Co. 1913. $1.20. Written for: Teachers of mathematics in high school and college.

Special contribution: Gives essays appealing to the teachers to save mathematics to the school through improvement in methods of teaching and selection of material. Topics treated: Underlying principles of axiom, postulate and proof; Meaning of "tuition" mathematically; The useful and the real in mathematics; The unrealized possibilities; Simple and novel considerations for teaching of elementary arithmetic; Value of geometry for inspiration and appreciation other than practical purposes; Deduction in mechanics and comparison with geometry.

3. On the Study and Difficulties of Mathematics: 284 pages. Augustus De Morgan, English Mathematician. The Open Court Publishing Co. 1910. $1.25. Written for: Teachers of ele-

mentary mathematics and students who have had some elementary work in algebra and Euclid.

Special contribution: In writing the book in 1831 De Morgan gives as his purpose to "place before them by itself, the part which has been omitted in their mathematical education." Topics treated: Nature and object of mathematics; Arithmetical notation with base 9 or 10; Algebraic notation and principles; Elementary rules of algebra; Equations of the first degree; The negative sign; ∞; Limits; Equations of the second degree; Imaginary numbers; Roots in general; Logarithms; Methods of studying algebra; Definitions; Axioms; Proportion; Application of algebra to the measurement of lines and angles; and proportion of figures and surfaces.

4. The Teaching of High School Mathematics: 90 pages. George W. Evans, Head Master of the Charleston High School, Mass. Houghton Mifflin Co. 1911. 35c. Written for: Teachers of first and second grade mathematics.

Special contribution: Suggestions as to simplification of subject matter for first year algebra and special methods of a few proofs in geometry. Topics treated: Necessity of reorganization of mathematics courses; Outline of first year algebra; Rules for computation; Methods of presenting graphs; Bases of proof in geometry; Special proofs for theory of limits; Pythagorean proof; Simpson's rule and the curve of sections.

5. Reorganization of Mathematics in Secondary Education: (U. S. Bulletin No. 32.) 70 pages. J. W. Young, Chairman of National Committee on Mathematics Requirements (a preliminary draft of the committee's report), Dartmouth College, Hanover, N. H. Government Printing Office, Washington, D. C. 1922. 10c. Written for: Teachers who wish to know what new reforms are recommended by the National Committee on mathematical requirements, which is composed of thirteen representatives from all over the United States.

Special contribution: The Committee was organized for "the purpose of giving national expression to the movement for reform in the teaching of mathematics, which had gained considerable headway in various parts of the country, but which lacked the power that coordination and united effort alone could give." Topics treated: Valid aims and purposes of instruction; Detailed account of material to be required of all pupils; Body of material that should be in courses for those who continue study beyond the minimum required essentials; Types of instruction in mathematics that may be looked upon as furnishing the best preparation for successful work in college; Changes desirable in statement of college-entrance requirements and in the type of college-entrance examinations; Lists of propositions and constructions in plane and solid geometry classified according to importance with minimum standard course indicated; Function concept in secondary school mathematics; Recommendations as to the adoption and use of terms and symbols in elementary mathematics.

6. The Reorganization of Mathematics in Secondary Education: (Complete report) 652 pages. Author: The National Committee on Mathematical Requirements, J. W. Young, Chairman. Under the Auspices of The Mathematical Association of America. Publisher: The Mathematical Association of America, Inc. 1923. 20c. Written for: Teachers and those who plan and direct courses in mathematics.

Special contribution: A comprehensive study of the whole problem concerned with the improvement of mathematical education in secondary schools and colleges. Topics treated: Aims; Organization of subject matter; Training of teachers; Mathematics in the Junior high school and Senior high school; College entrance requirements; Lists of classified propositions in plane and solid geometry; Function concept in secondary school mathematics; Terms and symbols to

be used and discarded; The present status of disciplinary values in education; The theory of correlation applied to school grades; Mathematical curricula in foreign countries; Experimental courses in mathematics; Standardized tests in mathematics for secondary schools; The training of teachers of mathematics; Certain questionnaire investigations; Bibliography on the teaching of mathematics.

7. The Teaching of Algebra Including Trigonometry: 609 pages. T. Percy Nunn, University of London. Longmans, Green and Co. 1919. $2.75. Written for: Actual and prospective teachers who wish, while maintaining all that is sound of the traditional methods, to orient themselves in accordance with the present drift of well-considered opinion.

Special contribution: A curriculum congruent on the whole with the recent report of the mathematical association, though in some respects more radical and in some more conservative. Topics treated: Algebraic manipulation of non-directed numbers; Hyperbolic and parabolic functions; Wallis' law; Calculation of pi and the sine-table; Logarithms; Slide rule; Exponential function and curve; Projections; Trigonometry of spherical triangles; Complex numbers; Periodic functions; Differentiation and integration; Expansions; Frequency-distribution; Probability and correlation.

8. The Teaching of Mathematics in Secondary Schools: 367 pages. Arthur Schultze, New York University. Macmillan Company. 1910. $1.80. Written for: The inexperienced teacher and others desiring specific help.

Special contribution: Attempts to make mathematical instruction less informational and tries to show how to train students in attacking mathematical problems. Topics treated: Causes of the inefficiency of mathematical teaching; Value and aims of mathematical teaching; Methods of teaching mathematics; The foundations of mathematics; Definitions; The first propositions in geometry; The original exercise; Methods of attacking theorems; The circle; Limits; Third book of geometry; Methods of attacking problems; Impossible constructions; Applied problems; The curriculum in algebra; Typical parts of algebra; The teaching of trigonometry.

9. The Teaching of Elementary Mathematics: 305 pages. David E. Smith. Teachers College, Columbia University. Macmillan. 1900. $1.80. Written for: Teachers of Elementary and High School Mathematics.

Special contribution: The treatment sets forth the subject as in the process of evolution, and points out the early stages of its development and teaching methods. Topics treated: Historical and present reasons for the teaching of Arithmetic, Algebra, and Geometry; The growth of the subjects; Past and present methods of teaching; General suggestions for teaching the several subjects included in elementary mathematics.

10. The Teaching of Geometry: 339 pages. David Eugene Smith, Teachers College, Columbia University. Ginn and Company. 1911. $1.40. Written for: The great body of progressive teachers.

Special contribution: Motivation of the subject matter tends to arouse interest and inspire progressive work on the part of the teacher and pupils. Topics treated: Reasons for the study of geometry; History of geometry; Development of the teaching side; Comparison of algebra and geometry; Presentation of formal geometry, giving special consideration to the separate sections which come in formal geometry.

11. Supervised Study in Mathematics and Science: 241 pages. S. Clayton Sumner, Supervising Principal, Palmyra, N. Y. Macmillan Company. 1922. $1.40. Written for: Teachers of mathematics and science.

Special contribution: A new point of view in classroom work is presented. Topics treated: Teaching of Algebra,

76 pages; Teaching of Plane Geometry, 33 pages; Teaching of Biology, 61 pages; Teaching of Physics, 15 pages.

12. Solving Geometric Originals: Frank C. Touton, University of Southern California. Bureau of Publications, Teachers College, Columbia University. 1924. $1.75. Written for: Teachers interested in the scientific aspects of geometry teaching.

Special contribution: Provides a typical scientific analysis of work done by pupils in a high school subject. Topics treated: Relative difficulties of exercises in geometry; Sex differences in geometric abilities; Thought processes involved in solving geometric originals; Suggestions for improvement of methods in teaching geometry.

13. Teaching of Mathematics: 351 pages. J. W. A. Young, University of Chicago. Longmans, Green and Company. 1907. $1.50. Written for: Prospective teachers of mathematics and teachers in service.

Special contribution: Brings out in one volume a sound and comprehensive treatise on the teaching of all branches of mathematics. Makes a thorough study of the several "methods" of teaching mathematics, viz., laboratory method, heuristic method, etc. Topics treated: Methods of teaching mathematics; Mode and methods; Pedagogy and values of mathematics; The teaching of arithmetic, algebra and geometry; Preparation of teachers; Mathematical clubs; The curriculum in mathematics; Material equipment.

FOR TEACHERS OF MODERN LANGUAGES

1. The Teaching of Modern Foreign Languages: 244 pages. Henry Gibson Atkins, King's College, University of London and H. L. Hutton, Merchant Taylor's School. Longmans, Green and Co. 1920. $2.00. Written for: Teachers of Secondary Schools and Universities.

Special contribution: Gives a broad and comprehensive review of the whole field of modern language teaching. Topics treated: Place of Modern Language in Time Table; Organization; Methods; Grammar; Teaching of History; The Second Foreign Language; The Organization of Advanced Courses; Bibliography.

2. The Teaching of German in Secondary Schools: 232 pages. E. W. Bagster-Collins, Teacher's College, Columbia University. Columbia University Press. 1916. $1.50. Written for: Teachers of modern languages in secondary schools.

Special contribution: The answers to two questions: What is the best work we can hope to do in a course extending over a maximum period of four years in the high school? What has experience to teach us as to the best way to do it. Topics treated: Contains a discussion of the "Reform" movement; Value of German; Aim of course, pronunciation, work in speaking, grammar, written exercises, composition, reading, translation, and vocabulary.

3. The Teaching of Modern Languages: 97 pages. Leopold Bahlsen, Professor in Berlin. Ginn and Company. 1905. $1.00. Written for: Teachers of Foreign Languages, especially German.

Special contribution: Gives a description of the German method of foreign language teaching. Topics treated: Methods of language teaching—historical sketch; The reform of modern language teaching in Germany; Pronunciation—phonetics, sound physiology, phonetic transcription; First instruction in French and German on a phonetic basis; The analytical-inductive method; German grammar as taught by the analytical-inductive method; A reading course in German for secondary schools.

4. An Introduction to the Study of Language: 325 pages. Leonard Bloomfield, University of Illinois. Henry Holt & Co. 1914. $2.50. Written for: The general reader, students in language, and students and teachers of modern languages.

Special contribution: Gives char-

acterization of the various languages, with a chapter of general suggestions as to teaching. Topics treated: The nature and origin of language; The physical basis of language; The mental basis of language; The forms of language; Morphology; Syntax; Internal change in language; External changes of languages; The teaching of languages; The study of language.

5. Teaching of Modern Foreign Languages in Our Secondary Schools: 171 pages. Karl Bruel, Cambridge University. Cambridge University Press. 1899. $1.00. Written for: Teachers of modern languages in secondary schools.

Special contribution: It sets forth the fact that the system of modern language teaching needs important changes, and that teachers must be better prepared. Topics treated: Part I: Methods, Punctuation; Spelling; Grammar; Idioms; Vocabulary; Conversation; Reading; Nature of the proposed reader; Study of the classics; The method of reading with a class; Should foreign literature as such be taught in schools. Part II: The teaching of German in our secondary schools; German letters; Pronunciation; Open questions; Grammar; Genders; Word-formation.

6. Report of the Committee of Twelve: 98 pages. Modern Language Association of America. D. C. Heath & Co. 1900. 60c. Written for: The Teacher of Modern Languages in the Secondary Schools.

Special contribution: Gives constructive and destructive criticism of each teaching method, with special reference to French and German. Topics treated: Value of Modern Languages in Secondary Education; Critical Review of the Methods of Teaching; Methods as Related to the Preparation of the Teacher; Modern Languages in the Primary Grades: The Extension of the High School Course; Proposal of Three National Grades of Preparatory Instruction in the Modern Languages; Elementary, Intermediate and Advanced course in German; Elementary, and Advanced course in French; Examination Papers for admission to college.

7. Art of Teaching and Studying Languages: 431 pages. Francois Gouin, Professor d'Allemand a l'Ecole Superieure Arago, Paris. Longmans, Green and Co. 1919. $2.50. Written for: Teachers in modern languages.

Special contribution: Primarily an investigation into the psychological laws underlying the universal act of learning the mother tongue by the little child, and springing therefrom, the exposition of a system of teaching foreign languages, based upon the gradual development of the human mind itself, which produces peculiarly successful results and endows the learner with a gift for languages.

8. The Direct Method of Teaching French: 160 pages. E. Gourio, University of Paris. Houghton, Mifflin Co. 1921. $0.80. Written for: Teachers interested in the direct method.

Special contribution: Technique for direct explanation of words and detailed description of exercises to be used. Topics treated: The program for the French classroom; The parts of speech; Need for lesson preparation; Home work; Pronunciation; Opposition to the method.

9. Methods of Teaching Modern Languages: 479 pages. Charles H. Handschin, Secretary of the National Federation of Modern Language Teachers. World Book Co. 1923. $2.40. Written for: The modern language teacher.

Special contribution: Statement of values of modern language study; The scientific foundations of modern language teaching; Methods; Pronunciation; Associating symbols and meaning; Oral work; Reading; Writing; Grammar; Realia; Teaching literature; Individual differences and supervised study; Reviews, tests, and examinations; Special problems, including: Topics treated: The arrangement of modern language texts; The vocabulary of beginners' books; Problems of administration; Teacher training; Extensive bibliography of methods; Resolu-

tions and recommendations; Syllabi of four-year courses.

10. How to Teach a Foreign Language: 194 pages. Otto Jespersen, University of Copenhagen. George Allen & Co. London. 1912. $1.00. Written for: Those interested in the teaching of English in foreign lands.

Special contribution: Gives application to the methods of a Danish teacher of English to the teaching of other modern languages. Topics treated: Use of folklore to arouse interest; Using mathematical principles in language teaching; Use of objects to impress the meanings of new words Comparison of known English words with unknown foreign ones; Quotations as to methods from ancient writers; Use of written methods in teaching.

11. The Direct Method in Modern Languages: 115 pages. Carl A. Krause, Brooklyn, New York. Charles Scribner and Sons. 1916. $1.00. Written for: Teachers and general public.

Special contribution: Contains a discussion of the basic principles of the Direct Method and their practical application to definite aims in teaching. Topics treated: The teaching of modern languages in German secondary schools; Discussion of the value of speaking the foreign language; Present conditions and the direct method; Remarks on the Regent's examination in German; The teaching of grammar by the direct method; The trend of Modern Language instruction in the United States; Suggestions for teaching Walter-Krause's Beginners' German; Why the Direct Method for a Modern Language?

12. Suggestions and References for Modern Language Teachers: 66 pages. Thomas Edward Oliver, University of Illinois, Urbana. University of Illinois, Urbana. 1917. 25c. Written for: Teachers of French, German and Spanish.

Special contribution: Contains a bibliography for the use of the language teacher and suggestions for classroom material; Also gives the addresses of reliable houses where such material may be secured. Topics treated: The Training of the Teacher; The teacher in the classroom; The teacher outside the classroom; Appendix giving addresses of American dealers, Publishers, and Importers mentioned in the Bulletin. (Topics are subdivided into opportunities for Travel and Study; Books of Travel; Political Histories; Methods; Journals; etc.)

13. The Oral Method of Teaching Languages: 134 pages. Harold E. Palmer, University College, London. W. Heffer & Sons, Ltd. 1921. Written for: Teachers of languages.

Special contribution: Gives good, clear and precise plans for conducting lessons on a conversational basis. Topics treated: What is the oral method?; The advantage of the oral method; The three types of oral method; Adult student forms of work suitable for use in an oral course.

14. The Scientific Study and Teaching of Languages: 321 pages. Harold E. Palmer, University College, London. World Book Co. 1917. Written for: Teachers and adult students of languages.

Special contribution: Gives a review of factors and problems connected with the learning and teaching of modern languages with an analysis of various methods. Topics treated: The nature of language; Preliminary factors of linguistic pedagogy; Principles of linguistic pedagogy; An ideal standard program; Special programs; The functions of the teacher; The student.

15. Principles of Language Study: 185 pages. Harold E. Palmer, University College, London. World Book Co. 1921. $2.40. Written for: Language teachers and adult students.

Special contribution: Contains a practical discussion of how languages may be best taught and learned. Gives a sound analysis of the processes by which a foreign language is acquired. Topics treated: Spontaneous capacities for acquiring speech; Capacities of students and how to use them; Why we must use our capac-

ities as students; The student and his aim; Supreme importance of elementary stage; Principles of language teaching; Initial preparation; Habit forming and habit adapting; Accuracy; Graduation; Proportion; Concreteness; Interest; A rational order of progression; The multiple line of approach; Memorized matter and constructed matter.

16. A Practical Study of Languages: 278 pages. Henry Sweet, President, Philological Society, Oxford. Henry Holt and Co. 1906. $1.50. Written for: Linguists and teachers of foreign languages.

Special contribution: Gives a comparison of the essential characteristics of many languages, with a view of decreasing difficulties of study. Topics treated: The study of languages; Phonetics; Phonetic notation; Foreign alphabets; Varieties of pronunciation; General study of phonetics; Begin with the spoken language; Difficulties of language; General principles of method; Special principles of method; Grammar; The dictionary; Study of the vocabulary; Texts; The reading book; Translation; Conversation; Literature; Dead languages.

17. Spanish in the High Schools: 264 pages. Lawrence A. Wilkins, New York City High Schools. Benj. H. Sanborn & Co. 1921. Written for: Teachers of Spanish in Junior and Senior High Schools.

Special contribution: Gives helpful methods and devices for teaching Spanish; Contains valuable suggestions for arousing interest in class room and club work. Topics treated: "Why teach Spanish?"; Present progress of Spanish in the schools; Preparation of the teacher; Aim in teaching Spanish; Methods; The course of study in Spanish in the Junior High School and methods of teaching it; Organization of classes; The recitation; Methods and devices; Club work; Handicaps to the teaching of Spanish; Spanish as a foundation for Latin; Bibliography and other aids for the teacher of Spanish.

FOR TEACHERS OF MUSIC

1. Applied Harmony: 208 pages. Caroline A. Alchin, University of California, Berkeley. A. A. Alchin. $2.25. Written for: Teachers of Harmony in High Schools.

Special contribution: Gives a better understanding of music and increase in power of expression, either in performance or creative work. Topics treated: Intervals and scales; Chord construction; Chord relation; Melody writing; Harmony; Chromatics and all other chords; Modulation. These are demonstrated with musical excerpts taken from the best composers. This acquaints pupils with great works in an analytical way and stimulates further study of same works.

2. School Music Handbook: 261 pages. Cundiff, State Teachers College, Huntington, West Va., and Dykema, University of Wisconsin. C. C. Burchard & Co. 1923. $2.50. Written for: All teachers of school music.

Special contribution: Gives current methods of instruction. Topics treated: Part One: Pertaining to the field of school music; Part Two: The Theory of Music; Part Three: Pertaining to the child; Part Four. Pertaining to the teacher; Part Five: Pertaining to related subjects.

3. How to Study Music: 294 pages. C. H. Farnsworth, Columbia University, New York City. Macmillan Co. 1920. $1.80. Written for: Teachers of music.

Special contribution: Aids in a better understanding of music by teaching a child how to enjoy and appreciate it. Topics treated: Difficulties in the study of music; How to listen to music; How to learn notation without awakening a dislike for music; How a child should learn to sing; How to learn to play the piano; How to learn to enjoy classical as well as modern music; How to select music; How to make use of music in the family.

4. Resonance in Speaking and Singing: 88 pages. Thomas Fillebrown, lecturer of voice development. Oliver Ditson Co. 1911. $1.25. Written for: Essential service to teachers and advanced pupils of singing and oratory; especially for young teachers.

Special contribution: Describe value of each element in the production of the perfect tone and demonstrates principles which develop in individual voice; prepare pupil to enter upon more advanced arts in speaking and singing. Topics treated: A scientific exposition of fundamentals with breathing and vocal exercises and illustrations. Emphasizes psychology rather than physiology.

5. Essentials in Conducting: 18 pages. Karl W. Gehrkens, Oberlin Conservatory. Ditson Co. 1918. $1.75. Written for: Amateur conductors.

Special contribution: Treats of practical details, a knowledge of which is invaluable to the amateur conductor. Topics treated: Personal traits necessary in conducting; Technique of the baton; Interpretation; The community chorus conductor; The orchestral conductor; The choir conductor; Boy choirs and their problems; The conductor as a voice-trainer; The art of program making; Efficiency in the rehearsal.

6. An Introduction to School Music Teaching: 126 pages. Karl W. Gehrkins, Oberlin College. C. C. Birchard and Co. 1919. $1.50. Written for: Teachers of music in both elementary and high schools.

Special contribution: Not a "manual of method" but "such general information concerning certain matters pertaining to music teaching in the public schools as both supervisor of music and school superintendents need to acquire just now in order to clear the air."

7. Music Notation and Terminology: 168 pages. Karl W. Gehrkens, Oberlin Conservatory. A. S. Barnes Co., New York and Chicago. 1914. Written for: Students and teachers of music.

Special contribution: Is a collection of clear and accurate definitions of music terms, arranged in related groups. Topics treated: Principles of correct notation; Symbols of music defined; Abbreviations; Signs; Embellishments; Scales; Pronouncing index; Measure and tempo; Terms relating to forms and styles of instrumental and vocal music; Rhythm; Melody; Harmony; Intervals; Chords; Cadences; History of music notation; Musical instruments; Acoustics; Terminology reform.

8. Grade School Music Teaching: 257 pages. T. P. Giddings, Public Schools, Minneapolis, Minn. C. H. Congdon, 200 Fifth Ave., New York City. 1919. $1.50. Written for: Public School Music teachers and supervisors.

Special contribution: Contains sight singing and voice testing devices. Topics treated: Rhythm; Reading music; Individual singing; Theory; Voice testing; Concerts and entertainments; Appreciation; Conducting.

9. High School Music Teaching: 192 pages. T. P. Giddings, Public Schools, Minneapolis, Minn., and E. L. Baker, 3800 Columbus Ave., Minneapolis, Minn. 1922. $1.50.

Special contribution: Contains many suggestions for High School Music organizations. Topics treated: Chorus; Glee Clubs; Orchestras and Bands; Conducting; Concerts and entertainments; Credits for applied Music; Instrumental and Vocal classes; General Supervision; Harmony; History Appreciation.

10. Interpretation in Song: 300 pages. Harry Plunkett Green. Macmillan Co. 1921. $2.00. Written for: All teachers of vocal music, especially good for high school instruction.

Special contribution: Rule I. Never stop the march of a song; Rule II. Sing mentally through your rests; and Rule III. Sing as you speak. Topics treated: Interpretation involving: Perfected technique; Magnetism; Sense of atmosphere; Command of tone color; Style; Classification of songs; How to study a song; Making of programs.

11. Journal of Proceedings, M. S. N. C.: 315 pages. Secretary of the Association. George Oscar Bowen, University School of Music, Ann Arbor, Michigan. 1920-1924. $2.00 per volume. Written for: Teachers and supervisors of music.

Special contribution: Each volume provides a comprehensive treatment of the best current thought of the year such as: Correlation of singing and the listening lesson; Correlation of music and English; Use of the music library; The band as a school and community asset; The daily lesson plan; Musical training of grade teacher; Training of music supervisors.

12. The Common Sense of Music: 324 pages. Sigmund Spaeth, New York newspaper musical critic. Boni and Liveright. 1924. $2.00. Written for: All interested in music and the teacher especially.

Special contribution: Approaches the subject of music in a common sense fashion, analyzing the effects of this mysterious art upon the casual listener and finds a reason for some of the common reactions to musical performance and compositions.

FOR TEACHERS OF PHYSICAL EDUCATION

1. The Physiology of Muscular Exercise: 201 pages. F. A. Bainbridge, University of London. Longmans, Green and Co. 1919. $4.00. Written for: Physical Education Instructors and others concerned with health of community.

Special contribution: Gives results of experimentation in the field. Topics treated: Sources of muscular exercise; Respiratory changes during exercise; Output of heart during exercise; Blood supply to active organs during exercise; Co-ordination and changes during exercise; Training; Exercise at high altitudes; After effects of exercise.

2. Pedagogy of Physical Training: 225 pages. C. Ward Crampton, Public School Athletic League, New York City. Macmillan Company. 1922. $2.00. Written for: Directors of Physical Training and elementary school teachers.

Special contribution: Presents high mission and dignity of a Physical Training director, and his aim—the promotion of health, happiness and efficiency (H_2E). Topics treated: Physical training as a profession; The equipment of the teacher; Lesson plan; Commands; Introductory work; Corrective work for good posture; Educational value; Educational exercises; Remembering; Hygienic work; Recreative work.

3. School Program in Physical Education: 132 pages. Clark W. Hetherington, Teachers College, Columbia University. World Book Company. 1922. $1.00. Written for: Physical Education directors and school administrators.

Special contribution: Formulates a complete school program on physical education adapted to American needs and ideals. Topics treated: The social status of physical education; The objectives of physical education; The principles of organization of physical education; The program in physical education; Criteria for selecting and organizing activities.

4. Health Studies: 206 pages. Ernest Bryant Hoag, Physician, Los Angeles, California. D. C. Heath and Co. 1909. $1.40. Written for: Physical education teachers.

Special contribution: Gives suggestions for content of course and methods of presenting it. Topics treated: General plan of the body and cell structure; Organs and good digestion; Blood; Nervous system; Hygiene; Personal hygiene; Outdoor exercise and athletics; Public health; Suggestions for teachers.

5. A Textbook of Gymnastics: 347 pages. K. A. Knudsen, Chief Inspector of Gymnastics for Denmark. J. B. Lippincott Co. 1920. $2.50. Written for: Teachers of gymnastics.

Special contribution: Sets forth the fundamentals of the Ling system of the harmonious development of the

body. Topics treated: Aims of physical education; Forms of exercises and how they accomplish aim; Special qualifications of good physical education teachers and how to teach; Apparatus.

6. **Play in Education:** 500 pages. Joseph Lee, War Camp Community Service. Macmillan Company. 1915. $1.80. Written for: Teachers of physical education.

Special contribution: Gives a criticism of modern industrial society; Treats of the evolution and value of play. Topics treated: Play is growth; Baby age; Dramatic age; Big "Injun" age; Age of loyalty; Apprentice age; Epilogue; Play the restorer.

7. **Gymnastic Teaching:** William Skarstrom, Wellesley College, Mass. Publisher: American Physical Education Association. 1914. $2.00. Written for: Teachers and students of physical education.

Special contribution: Shows adaptation of gymnastic work to all kinds of conditions. Topics treated: Essentials for successful teaching; Personality; Knowledge of methods and principles; Control and class management; Leadership-relations; Methods and technique; Subject matter; Aims and values of gymnastics; Classification; Content, character, progression of gymnastics lesson; Progression of apparatus exercises; Appendix; Progression lists of free standing exercises; Progression lists of apparatus exercises.

8. **Hygiene of the School Child:** 405 pages. Lewis M. Terman, Stanford University. Houghton Mifflin. 1914. $2.15. Written for: Teachers and others interested.

See books suggested for principals.

9. **Organization and Administration of Physical Education:** 325 pages. Jesse Feiring Williams, Teachers College, Columbia University. Macmillan Company. 1922. $2.00. Written for: Teachers of physical training and school administrators.

Special contribution: Presents a standardization of scientific facts, traits and guides, regarding physical training in the light of recent progress in the field. Topics treated: History of physical training; Aim and organization; Gymnasium and playground, their curriculum and activities; Place of physical training in the school, college, state and nation; The teacher and his technique; Supervision; Administration; Athletics and their management, intramural and extra-mural; Daily administrative details; Tests and measurements of physical efficiency.

FOR SUPERVISORS OF PLAY-GROUND ACTIVITIES

1. **Games for the Playground, Home, School, and Gymnasium:** 425 pages. Jessie H. Bancroft, Assistant Director Physical Training, New York City. The Macmillan Co. 1919. $2.40. Written for: Parents, teachers and supervisors, also players.

Special contribution: Is an extensive collection of plays and games for American, English and other European children. Topics treated: Games for elementary schools; For high schools; Games for playgrounds; Gymnasium; Summer camps for boys and girls; Singing games; Houseparty games; Games for small groups; For large groups; Seashore games; Instructions to teachers, parents and children.

2. **Handbook of Athletic Games:** 614 pages. Bancroft, Director of Physical Training, New York City, and Pulvermacher, Physical Training Director, New York City. The Macmillan Co. 1916. $2.00. Written for: All who need help in directing or supervising games; playground director or supervisor.

Special contribution: Gives descriptive and technical treatment of rules of games. Topics treated: Ball games—Baseball; Basketball; Field Hockey; Football; Golf; Handball; Ice Hockey; Indoor Baseball; Lacrosse; Lawn Tennis; Polo; Soccer; Volley Ball; Track and Field games and Rowing; Running; Walking; Jumping; Pole Vaulting; Weight Throwing; Rowing races.

3. **Baseball Notes for Coaches and Players:** 86 pages. Elmer Berry, Springfield College. 1916. $2.00. A. S. Barnes & Co. Written for: Coaches and players.

Special contribution: Covers whole playing of game—written in cryptic outline form well diagrammed. Topics treated: Batting; Bunting; Base running; Position play; Offensive team play; Defensive team play; Strategy; Training of College Team; Organized baseball.

4. **Handbook for Scout Masters:** 632 pages. H. W. Hurt. The Boy Scouts of America, 200 Fifth Ave., New York. 1915. Written for: Scout Masters and all interested in the Scout Movement.

Special contribution: Presents a collection of suggestive methods of planning, organizing and promoting Boy Scout work as experienced by successful Scout Masters. Topics treated: Troop Method and Technique; Scouting; Hikes and Meetings; Scoutmaster; The Scout and His Life Work; The Scout Uniform; Story Telling; Some Rural Problems; History of Boy Scouts of America; National Constitution and By-Laws.

5. **The Practical Conduct of Play:** 325 pages. Henry S. Curtis, City Schools, Washington, D. C. The Macmillan Co. 1915. $2.00. Written for: Playground directors and supervisors.

Special contribution: Gives valuable information and suggestions as to organization and equipment of playgrounds. Topics treated: Construction of the playground; Playgrounds according to ages and sexes; Play equipment; Swimming pools; Field house; The organizer of play; The training of playground directors; Playground programs; The playground attendance; Curriculum of play; Team games; Miscellaneous activities; The play festival; Discipline.

6. **Rhythm, Music and Education:** 334 pages. Emile Jacques DalCroze, Conservatory of Geneva, Switzerland. G. Putnam's Sons, New York. 1921. $3.00. Written for: Physical Education teachers of girls of high school age.

Special contribution: Suggests sensible substitute for Aesthetic Dancing on the basis of Music and the time element. Appeals to the ear by means of musical chords at the same time developing patterns with the feet. Gives emotional control. Topics treated: Place of ear in musical education; An essay on the Reform of Music Teaching in Schools; The young lady of the Conservatory and the Piano; Initiation into Rhythm; Music and the child; Rhythmic movement; Solfeggio; and Improvisation; Eurythmics and musical composition; Music joy and the school rhythms and creative images; Rhythm and gesture in music drama; How to give dancing Eurythmics and moving plastic; Music and the Dancer; Rhythm; Time and Temperament; Musical Supplement.

7. **A Handbook of Games and Programs:** 119 pages. W. R. LaPorte, University of Southern California. Abingdon Press. 1922. $1.00. Written for: Directors of games and programs in the church, home, and school.

Special contribution: Gives an extensive list of games, suitable to various situations and a brief set of directions for the conduct of each game; bibliography. Topics treated: Social leadership; Get acquainted games; Active social games; Quiet social games; Competitive social games; Social programs for special occasions; Playground games; Relay races, and Physical stunts.

8. **Health by Stunts:** 210 pages. Pearl and Brown, Army Athletic Directors. The Macmillan Company. 1919. $1.30. Written for: Physical Director of public playgrounds and supervisor.

Special contribution: Gives a clear description of old time or fundamental stunts and contests with methods of measuring results. Topics treated: The war as an impetus; Existing physical conditions; Organization; Athletic events that can be

timed or measured; Stunts, individual and combination; Contests; The Decathlon contest; Major sports of the elementary school; Stunts adapted for girls.

FOR TEACHERS OF PUBLIC SPEAKING

1. **The Teaching of Oral English:** Emma C. Bolenius. See books recommended for teachers of English.

2. **Oral English:** John Brewer. See books recommended for teachers of English.

3. **The Making of an Oration:** 420 pages. Clark Mills Brink, Kansas State Agricultural College. A. C. McClurg & Co. 1917. $1.75. Written for: Beginning orators.

Special contribution: Points out imperfections of public speakers and gives valuable suggestions. Topics treated: Nature and elements of oratory; The plan of an Oration; The composition of an Oration; Gifts and habits of the Orator; A number of important speeches for careful study.

4. **Choice Readings for Public and Private Entertainments and for the Use of Schools:** 601 pages. Robert McLean Cumnock, School of Speech, Northwestern University, Evanston, Ill. A. C. McClurg and Co. 1878. $1.75. Written for: Students and teachers of oral expression in schools and colleges and for public readers.

Special contribution: Aims to develop a natural speaker and to discourage imitation of interpretation. Topics treated: Pronunciation; Natural, agreeable, and effective quality of voice; Physical prerequisites to full and free use of vocal powers; Limitations of elocutionary science; Principles of vocal expression as applied to selections classified according to type.

5. **Public Speaking Today:** 264 pages. F. C. Lockwood, University of Arizona, and C. D. Thorpe, University of Oregon. Benj. H. Sanborn & Co. 1922. Written for: Teachers of oral English in secondary schools.

Special contribution: A good reference book for teachers of public speaking. Topics treated: Need for public speakers; First steps in the art of public speaking; How to get material; Build speech; Win and hold the audience; Utter the speech; Correct and effective speaking; Platform decorum; Exercises; Some important forms of public speaking; Impromptu talks; Informal address; Formal address; Oration; Debate; After-dinner speech; Every-day conversation; Spoken drama; The conduct of Public Meetings; School Organization; What to do and how to do it; Public meetings.

6. **Notes on Speech Making:** 91 pages. James Brander Matthews, Columbia University, New York. Longmans, Green Co. 1901. 50c. Written for: Amateur public speakers.

Special contribution: Is based upon the author's wide personal experience and contains suggestions from recognized authorities. Topics treated: The formal speech; Informal efforts; Concrete problems; Four ways of delivering an address; Real secret of after-dinner speech.

7. **How to Speak:** 158 pages. Adelaide Patterson. Little, Brown & Co. 1922. Written for: Teachers and students of elementary schools, high schools and colleges.

Special contribution: Gives valuable suggestions to teachers for improving voice, breathing, enunciation. Topics treated: Correct posture for speaking; Breathing exercises; Tone; Quality tests; Radiation; Force; Volume; Pitch; Pause, Rhythm and Time; Articulation Exercises; Vowels, Consonants; Practice.

8. **High School Debate Book:** 229 pages. E. C. Robbins, State University of Iowa. A. C. McClurg & Co. 1911. $1.50. Written for: Teachers and students of debate in schools.

Special contribution: Discusses the principles of debate and includes briefs of several questions. Topics treated: The value of Debate; Preliminary work; Briefing the Question;

Preparing the speech; Briefs for Debate.

9. **Practical Stage Directing for Amateurs:** 194 pages. Emerson Taylor. E. P. Dutton and Company. Third printing 1921. $1.00. Written for: A handbook for amateur managers and actors, especially useful to the teacher of dramatics and music.

Topics treated: The choice of a play; Organization; Rehearsing; The amateur actor's A-B-C; Make-up; The stage and the scenery.

FOR TEACHERS OF SCIENCE

1. **The Teaching of Geography:** F. K. Branom. (See books recommended for teachers of Social Science.)

2. **Science Teaching and the Science Teacher:** B. S. Brownell and F. B. Wade, University of Nebraska and Shortridge High School, Indianapolis. The Century Co. 1925. $2.00. Written for: Teachers of science.

Special contribution: Information, comments, and advice based on the experience of authors. Offers a clear-cut, practical discussion of science teaching methods. Deals with the fundamentals of instruction in the classroom, organizing the textbook work and the classroom lecture around the work of the laboratory. Topics treated: Chapters on the preparation of the teacher; on his relation to the community in which he lives; class management; and the phases of science teaching in moral education; special methods for the several sciences; gives helpful information regarding laboratory arrangement and equipment and the purchasing of supplies.

3. **A Field and Laboratory Guide in Physical Nature Study:** 109 pages. Elliot R. Downing, Chicago University. University of Chicago Press. 1919. $1.60. Written for: Teachers of natural science in high schools.

Special contribution: Gives suggestions for projects as an introduction to science, with interests of child as point of departure. Topics treated: Minerals and rocks; Stars and solar system; Toys that work by air; Top, sling and bow; The hot air balloon and some experiments; Some common appliances operated by heat; Magnetic and electric toys; The camera; Telescope; Magic lantern; The home-made orchestra; How to make the phonograph and telephone; How to make a pair of scales and use other mechanical contrivances.

4. **The Teaching of General Science:** 169 pages. W. L. Eikenberry, University of Kansas. University of Chicago Press. 1923. $2.15. Written for: General science teachers, principals and superintendents.

Special contribution: Gives practical aid to general science teachers in determining aims of general science course, in organizing the course, and in determining methods. Topics treated: Historical considerations; Criticism of science teaching; Reforms; Objectives in science teaching; Objectives of general science; Methods and general science; Subject matter of general science course; Principles of organization; Examples of organization of general science; The general science teacher.

5. **Biology in the Public Press:** 151 pages. Charles W. Finley and Otis W. Caldwell, Teachers College, Columbia University. Publisher: Lincoln School, Teachers College. 1923. No cost stated. Written for: Biology teachers in secondary schools.

Special contribution: Presents an inveatigation of the subject matter and school procedure necessary to meet the daily needs of pupils as indicated by articles appearing in representative newspapers. Topics treated: Health; Animals; Food; Plants; Organization of producers; General nature; Evolution; Conclusion.

6. **The Teaching of Physics:** 304 pages. C. Riborg Mann, University of Chicago. Macmillan Company. 1912. $1.80. Written for: Teachers of physics in high schools.

Special contribution: Gives history, origin and development of physics in high school and leading characteristics and possibilities of physics as a means of general education (both cultural

and vocational). Topics treated: Development of present situation (Background, natural philosophy, prescribed physics, textbooks); Physics and democratic education (Pedigree, method, biography, discipline); Hints at practical application (Concrete problems, organization, laboratory work, testing).

7. Reorganization of Science in Secondary Education: 62 pages. (U. S. Dept. of Interior Bulletin, No. 26.) Author: Committee of National Education Association. Publisher: Government Printing Office, Washington, D. C. 1920. 10c. Written for: Teachers of science in secondary schools, and administrators.

Special contribution: Presents methods of adjusting science courses to meet present day conditions. Topics treated: The general aims and purposes of science instruction in secondary schools; General principles governing selection and presentation of material; Science sequences; The aims, reorganized methods, and the selection of materials for each of the separate branches of science in secondary schools; Discussion of place and manner of laboratory work, class work, reports, excursions, etc.

8. Natural Science Teaching in Great Britain: (U. S. Dept. of Interior Bulletin, No. 63.) Committee appointed by Prime Minister of Great Britain. Government Printing Office, Washington. 1919. 15c. Written for: Natural science teachers and administrators.

Special contribution: Gives the position of natural science in Great Britain's educational system and conclusions as to measures needed to promote its study. Topics treated: Place of science in secondary, elementary, and technical education in Great Britain; Place of science in professional education in the fields of medicine, pharmacy, engineering, agricultural science, chemistry and military; Science in university education in Great Britain.

9. How to Teach Physics: 186 pages. R. D. Rusk, Northwestern College. J. B. Lippincott Company. 1924. $1.80. Written for: Teachers of physics.

Special contribution: Social emphasis and the project method. Topics treated: Development of physics teaching; Aims; Physics and mathematics; Scientific method; Practical physics teaching; classroom material; The laboratory course; Apparatus and equipment; Mistakes in teaching.

10. How to Study: (Illustrated through physics.) 56 pages. Fernando Sanford, formerly Professor of Physics, Stanford University. Macmillan Company. 1922. 80c. Written for: Teachers and students.

11. Chemistry in High Schools: (Bulletin of the University of Texas.) 119 pages. E. P. Schoch, University of Texas. University of Texas. 1911 Written for: High School supervisors and chemistry teachers.

Special contribution: Gives specific details for the planning of rooms, ordering supplies, organization of subject matter and outline of course. Topics treated: Equipment (ordering equipment and planning room); Plan and conduct of the course; Outline of introduction to the first principles of chemistry; Appendix—details for the construction and operation of an 110-volt alternating current rectifier.

12. Teaching of Chemistry and Physics in the Secondary School: 377 pages. Alexander Smith, University of Chicago and Edwin H. Hall, Harvard University. Longmans, Green and Co. 1902. Written for: Science teachers and student science teachers.

Special contribution: Gives detailed organization of the subject matter in chemistry and physics with the purpose in view of eliminating difficulties in science teaching. Topics treated: Chemistry in the curriculum; Constituents of the high school chemistry course; Physics teaching in the grammar and high school; Some phases of physics presented; Instruction in the laboratory and technique of laboratory management; Instruction in classroom; Lectures, recitations, equipment, books, etc.

13. The Teaching of Science in the Elementary School: 293 pages. G. H.

Trafton, State Normal School, Mankato, Minn. Houghton Mifflin Company. 1918. $1.90. Written for: Elementary science teachers with limited science training and working apparatus.

Special contribution: Gives a most comprehensive outline by grades and seasons for the study of field of science within the everyday experiences of the child. Topics treated: Psychology applied to aims, motivation, materials and methods of elementary science; Biological science; Animals and plants in child's world; Agricultural science, including gardening; Hygiene; Health of child and community; Physical science; Chemistry and physics of things within the child's range; Outline for each grade for a whole year; (This outline is based on everyday science and taken at appropriate seasons.)

14. Principles of Science Teaching: 486 pages. G. R. Twiss, Ohio State University. Macmillan Company. 1917. $2.00. Written for: Teachers of natural sciences.

Special contribution: Gives practical suggestions for laboratory equipment and supplies, lesson plans, bibliographies and methods. Correlates modern experimental and educational psychology with science teaching. Topics treated: Science in relation to its meaning, viewpoints, genesis, methods, functions and values; Classroom and laboratory instruction in the various branches; Lectures, excursions and reviews in the various branches; Equipment for various branches; Science and the curriculum; Examinations and tests.

15. The Teaching of Science: 249 pages. J. F. Woodhull, Teachers College, Columbia University. Macmillan Company. 1918. $1.80. Written for: Science teachers in secondary schools.

Special contribution: Gives a historical concept of the general trend of the science movement in education and numerous suggestions for the enrichment of science teaching. Topics treated: Values of natural science; Enrichment of physics; Trend of physics and chemistry teaching; Intensive method in chemistry; Science for culture; Teaching of physical science; Specialization for physics teaching; Practical chemistry; General science; Projects in science; The high school situation; Aims and methods of science teaching; Imitation of masters.

FOR TEACHERS OF SOCIAL SCIENCE

1. The Teaching of Geography: 292 pages. M. E. and F. K. Branom, Harris Teachers College, St. Louis and Chicago State Normal School. Ginn and Co. 1918. $1.48. Written for: Teachers of geography in grades 6 to 8.

Special contribution: Emphasizes the project or active method. Topics treated: Evolution of geography; Relations to other subjects; Evolution of geography method; Aims and purposes; Course of study; Use of maps, trips; Problems in geography teaching; Journey geography; Use of story in teaching geography; Dramatization; Projects; Measuring results.

2. The Teaching of History and Civics: 385 pages. Henry E. Bourne. Western Reserve University. Longmans, Green and Co. 1915. $1.75. Written for: Teachers of history who have not had special training in historical work.

Special contribution: Gives the problems of historical instruction, presented with a review of the general field of history with bibliographies. Topics treated: Part I: The Study and Teaching of History in French and German Schools; History in American Schools; The value of History; The aim in teaching Civics; The program for History; The school and the library; The facts of most worth; Methods of teaching History; Source method; Part II: The course of study; Ancient History; Greek History; Roman History; Mediaeval History; Expansion of Europe; Founding of America; European History since 1560; History of the United States; The course of study in elementary schools; The teaching of Civics.

3. A Course in Citizenship and Patriotism: 386 pages. Cabot, Wellesley University, Andrews, State Board of Education of Mass., Coe, Hill, McSkimmon. Houghton Mifflin Co. 1914. $1.90. Written for: Teachers of Citizenship in all elementary grades.

Special contribution: Materials given and outlined for each month in each grade. Topics treated: Contains a bibliography to guide home reading of child; The Home as the center; The School and Playground; The Neighborhood; The Town and City; The Nation; American Ideals; The United States and the World; The World Family.

4. Economics in the Secondary School: 93 pages. John Haynes, Hyde Park High School, Boston, Mass. Houghton, Mifflin Co.—The Riverside Press—Cambridge. 1914. $1.20. Written for: Teachers of Economics in secondary schools, especially the inexperienced and those with but a limited knowledge of the subject.

Special contribution: Contains a plea for the importance of economics in the high school curriculum. It makes a disinterested person more in sympathy with teaching the subject in the secondary school. It also gives a good bibliography for the inexperienced teacher. Topics treated: The need of economic knowledge; The suitability of economics, as a secondary school subject; The present status of economics in the secondary school; The place of economics in the curriculum and its relation to other subjects; Methods of teaching economics; The content of the course in economics.

5. Community Life and Civic Problems: 528 pages. Howard Copeland Hill, University of Chicago. Ginn & Co. 1922. $1.40. Written for: Primarily as a textbook for Junior High and High Schools.

Special contribution: Points out man's responsibilities in his dependence on others. Topics treated: Group life in the family, school, church and community; Community welfare; Immigration; Public health; Police, Fire protection; Recreation; Civic beauty and care of the handicapped; Problems of industry; The Work and Worker; Communication and Transportation; Labor and Capital; Politics and Government, Local, State and Federal; Political Parties; The Ballot.

6. The Teaching of Civics: 144 pages. Mabel Hill, Wellesley, Mass. Houghton, Mifflin Co., Boston, New York and Chicago. 1914. 75c. Written for: Instructors of Civics in Junior and Senior High Schools.

Special contribution: Contains twenty-four suggestive lessons relating to civic organizations and institutions. Topics treated: The problem of teaching civics; Old and new methods; Means by which Civics may be made of value to pupils; Suggestions for teaching Civics; Suggestive lessons of practical value to teachers and pupils.

7. Teaching of History in Elementary and Secondary Schools: 487 pages. Henry Johnson, Teachers College, Columbia University. The Macmillan Co. 1915. $1.80. Written for: Students of Education or History teachers.

Special contribution: It gives a broad survey of past and present conditions in the teaching of history. It presents, concretely, the fundamental conditions of making history of any kind effective in the school. Topics treated: What History is; Problem of grading; Aims and values; History teaching in the United States; Biographical approach; Study of social groups; Making the past real; Use of models and pictures; Use of maps; Textbooks in History; Use of textbooks; Correlation with other subjects; Collateral reading; History examinations.

8. Training Teachers for Americanization: 62 pages. J. J. Mahoney, Supt. of Americanization of the State of Mass. Government Printing Office, Washington. 1920. 10c. Written for: Teachers of Americanization.

Special contribution: Directions and

suggestions are given for the teaching of classes of adult foreign-born persons who are unable to speak, read or write English, and who know little or nothing of America and American ideals, history, manners, customs, and laws. Topics treated: Preliminary training of the teacher; Meaning of the terms America, Americanism, Americanization; The organization of American activities; The immigrant backgrounds and racial characteristics; An outline of the Americanization movement; Industrial or factory classes, under which comes the classroom equipment and methods of instruction; Home and neighborhood teacher.

9. Social Civics: 697 pages. William Bennett Munro, Harvard University, and Charles Eugene Ozanne, Teacher of Civics, Cleveland, Ohio. The Macmillan Company. 1922. $1.75. Written for: Teachers of High School civics and economics.

Special contribution: Group problems are given as a help to project method of instruction. Topics treated: American environment; organization of government; Action and policy; Questions dealing with economics; Sociology and international relations; Local and state government; The Citizen; National Constitution; Congress at work; Public ownership; Health; Education; Poor Relief; Welfare; (100 pages list of references for supplementary material. Topics for debate. Questions and 15 illustrations.) The National defense; Foreign relations; United States and the League of Nations; Political and Social Reconstruction.

10. 22nd Year Book, N. S. S. E., Part II: 344 pages. National Society for Study of Education. Public School Publishing Co., Bloomington, Illinois. 1923. $1.50. Written for: Teachers of Junior and Senior High Schools.

Special contribution: Gives the program for curriculum of Social Studies. Topics treated: Social studies and life activities; Social studies in the curriculum; Proposal of the commission of the Association of Collegiate Schools of business; How the content courses came to be what they are; An introduction to Social Studies; Building a fact course of History in the University of Iowa; Proposed Social Science Course; Collegiate Survey Course in Social Science; Basic facts needed in history and geography; Application of methods and research to making course; Problems of contemporary life; Basis for curriculum of Social Science; Curriculum making; Economic aspects.

11. Civic Education: 333 pages. David Snedden, Teachers College, Columbia University, New York. World Book Company. 1922. $2.16. Written for: Teachers and Administrators.

Special contribution: This book is an aid to those who are trying to find and develop more purposive and effectual objectives and means of civic education. Topics treated: Suggestions to Teachers; Explanation and definition of terms such as education, social education; Aims of Education and social education; Why schools should be reorganized on a social basis; Objectives of civic education; Miscellaneous suggestions; sociological foundations of civic education; The sociological meaning of education; The meaning of social education; Society's need of civic education; Objectives of civic education—civic shortages; Education for Democracy; Problems of objectives, courses, and research in civic education; Means and methods of civic education—case group method of determining; Suggestions for carrying on civic instruction; Courses of study; Problems of research; Sample studies.

12. Supervised Study in American History: 278 pages. Mabel E. Simpson, City Schools, Rochester, New York. The Macmillan Co. 1918. $1.40. Written for: Teachers of History.

Special contribution: Gives a detailed outline of suggestive lessons touching upon many of the great questions of American History—showing organization of subject matter and methods of procedure.

13. Americanization: 320 pages.

Winthrop Talbot, writer on social and labor problems. H. W. Wilson Co. 1917. $1.25. Written for: The general public as a means of clarifying the national thought in regard to Americanism, and as a hand book on the technic of Americanization.

Special contribution: It makes easily accessible essential excerpts from the elder statesmen, as well as writers of today, from which one may gather first hand correct ideas of Americanization. Topics treated: Digest of American philosophy in relation to those ideals and principles which inform American life; Technic of Race-Assimilation, a compendium of practice, giving the details of assimilation methods in education, industry, politics, and everyday living; the annotated Bibliography is a helpful selected list of books on Americanism and Americanization; Periodical references since 1900.

14. The Teaching of History in Junior and Senior High Schools: 294 pages. Rolla M. Tryon, The University of Chicago. Ginn and Company. 1921. $1.40. Written for: Teachers of History in Junior and Senior High Schools.

Special contribution: Gives suggestions on the technique of history teaching as applied to daily classroom activities. Topics treated: The History recitation; Teaching pupils to study History; Special methods of procedure, lecture, textbook, topic, source and problem; Progress within the subject; Written work in History; Term paper and permanent notebook; Measuring the results; Library and collateral reading; Current events; Planning the course and the lesson; The teacher.

15. The Study of Nations (An Experiment in Social Education): 190 pages. Harriet E. Tuell, Sommerville High School, Mass. Houghton Mifflin Company. 1919. $1.20. Written for: American school teachers who desire to widen the civic horizons of their pupils.

Special contribution: Develops a course on the "Study of Nations" which attempts to give training to future American citizens so that they will be fitted to take a co-operative part in the great world movements of their time. Topics treated: A general explanation of the content of such a course as the "Study of Nations," including the method of approach and some of the results from experiments; Method of presentation of the course by dividing the European Nations and discussing each topically with the aid of an outline and reading references for each nation; Oriental Nations and Philippines written by K. S. Latourette.

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THE *first two numbers of the* CALIFORNIA QUARTERLY OF SECONDARY EDUCATION *have been issued, not as an experiment but as a demonstration.*

The October and January numbers of THE QUARTERLY *have given evidence beyond any doubt whatever that there is constantly developing within the secondary group in California a wealth of material that would be of incalculable value to the schools of the State, if made available to all secondary teachers. That is one service the California Society for the Study of Secondary Education proposes to render through the publication of* THE QUARTERLY.

The findings of students of education and the reports of investigating committees can be of no avail unless such findings and reports are brought to the attention of those who can use them. Research, without the dissemination of knowledge and its application, is futile. Teachers are, in any final analysis of the school situation, the only agency through which needed and directed changes can be wrought. To the service of teachers in the secondary schools of California, therefore, are the pages of the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION *dedicated.*

To render the greatest service to the secondary schools of the State, the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION *should reach each secondary teacher. The service rendered far outweighs the nominal membership fee of $2.00. Present members are urgently requested to promote interest in membership in the Society within their professional groups.*

THE PROBLEM OF SCIENCE TEACHING IN SECONDARY SCHOOLS*

DR. ROBERT A. MILLIKAN
Norman Bridge Laboratory of Physics, California Institute of Technology

PASTEUR, whom the French nation has repeatedly voted the greatest of all Frenchmen, expressed the following judgment: "In our century science is the soul of the prosperity of nations and the living source of all progress. Undoubtedly the tiring discussions of politics seem to be our guide—empty appearances. What really leads us forward is a few scientific discoveries and their applications."

Other Estimates of Science—H. G. Wells. But possibly Pasteur, himself a scientiest, saw his own field a little out of perspective. Let us, therefore, assign to him a discount value and seek the less naturally biased judgment of a man of letters. H. G. Wells writes as follows: "When the intellectual history of this time comes to be written, nothing, I think, will stand out more strikingly than the empty gulf in quality between the superb and richly fruitful scientific investigations that are going on, and the general thought of other educated sections of the community. I do not mean that scientific men are, as a whole, a class of supermen, dealing and thinking about everything in a way altogether better than the common run of humanity, but in their field they think and work with an intensity and integrity, a breadth, a boldness, patience, thoroughness, fruitfulness, excepting only a few artists, which puts their work out of all comparison with any other human activity. In these particular directions the human mind has achieved a new and higher quality of attitude and gesture, a veracity, a self-detachment, and self-abrogating vigor of criticism that tends to spread out and must ultimately spread to every other human affair."

Charles W. Eliot and Herbert Spencer. But Wells has never been famous for his cold, judicious temperament. He has been a man of enthusiasms. Let us, therefore, assume that he, too, needs to be discounted, and let us consult the philosopher and the educator. In the volume of Herbert Spencer's "Essays on Education" in the Everyman's Series, you will find an introduction by Charles W. Eliot in which, in reviewing with approval what the great philosopher had to say, he writes: "Herbert Spencer concluded that for discipline, as well as for guidance, science is of chiefest value. He answers the question, What knowledge is of most worth? with the one word, 'science'."

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*Abridgment from an address by Dr. Millikan delivered before the convention of county and city Superintendents at Pasadena, October, 1925. Dr. Millikan has had experience in teaching elementary physics in secondary schools, also university experience in teaching courses in secondary physics and the pedagogy of secondary school physics, and is the author of a popular text in physics for secondary schools.—EDITOR'S NOTE.

Business Men and Philanthrophists. But all of these are more or less academic judgments, and the world sometimes refuses to take academic men at their own estimates. Hence I turn to the latest pamphlet issued by a group of business men and philanthrophists, the General Education Board, and find this as the first sentence of the second section: "The outstanding feature of modern intellectual life is the development of science and scientific method."

The Supreme Question. Now, if these judgments are all discounted fifty per cent and thus are only half-truths, they are yet so significant as to make a consideration of what the secondary school in the United States is doing now to instill the spirit and the method of science into the coming generation as supreme a question as can come before this or any other body of directors of secondary school education.

Five Conclusions. I now wish to set down five conclusions, some of which I shall elaborate, while others need only be stated.

My first conclusion is that we have scarcely begun to touch the possibilities of science instruction in the secondary school as a preparation for rational scientific living and thinking; yet this is a supreme need of America today, and particularly of California, where frauds and fads and cults and isms and other evidences of unscientific thinking and living are especially prevalent.

My second conclusion is that, in spite of our failure thus far to solve the problem, its elements are simple and definite; and the mere statement of these elements at once points the way at least to the next steps in the solution.

My third conclusion is that these elements are three in number. The first has to do with the method of technique of teaching a given science in the secondary school. The second has to do with the organization of the curriculum, and with the opportunity and urge which are given to the student to secure the science courses that he needs. The third has to do with the provision of suitable teachers.

My fourth conclusion is that perhaps ninety-five per cent of the effort which has been expended upon this problem has thus far been directed to the first element—the technique of teaching—and it is nearly useless to spend any more time upon it until the second and third elements—as yet almost untouched, have been tackled.

Known Technique Not Commonly Used. The successful technique of teaching high school physics, at least, and I think also of teaching other high school sciences, is now pretty well known. I am, of course, not asserting that it is incapable of improvement, and I am very far from asserting that it is always or even commonly used. The extent of its use has to do with the third element, the selection and training of teachers, and about this I shall presently have something to say. But for the last fifty years those who have been actually teaching secondary school phyics have been working out by trial and error a successful technique of that teaching, and there is now large agreement upon it. That technique is

not obtained, so far as I have ever observed, from courses in methodology in schools of education or teachers' colleges, and that for the very obvious reason, first, that these courses are rarely taught by men who know from actual experience much about secondary school science teaching, and second, that such courses lack the most vital and essential element of high school teaching, namely, learning by doing, contact with the presentation of the subject-matter itself. These methodology courses may be enormously valuable for grade teachers. Indeed, it is in the grade teaching that the teachers' colleges have made such contributions as have come from them to American education, for at least in the last forty years, during which I have been studying and observing high school science teaching, I have seen no appreciable contribution to the development of the successful technique of physics teaching in the secondary school come from any teachers' college. This is altogether natural, for these contributions cannot in the very nature of things be made except by men who themselves understand what science is, what its method is, and what it is doing in modern life, and these men are rare in departments of education. They exist in the scientific departments of our universities, and they exist to some extent in the schools themselves. This is not an unfriendly criticism of schools of education; it is merely an endeavor to point out what sort of progress may be expected from them and what sort may be expected to come from other quarters.

The General Science Movement. In order to illustrate what an immense amount of effort has been put into the first of my three elements alone, and to show the results that may now be obtained by putting a little effort into the second, I should like to review very briefly the General Science movement.

About twenty years ago we science teachers were told by our educational friends, that the trouble with science in the schools was that we were not teaching it rightly, that the smallness of its influence in the curriculum in the schools was due to the fact that we were not making it interesting, that we had it divided into watertight compartments which prevented the student from seeing what it was all about, and we were told that all would be well if we only set about remedying these difficulties. I myself never believed that the diagnosis was correct, and I was very skeptical of the suggested remedy, because it looked like a pretty thorough disorganizing of what we had spent much time in organizing, but I said deliberately, "Perhaps I am wrong and in any case I am perfectly willing to use the scientific method and to give your proposed remedy a trial," and I assisted in producing one of the early science texts.

How Shall We Find Time for Essentials? It was only when I began to study the high school curriculum for the sake of advising my own boys how to plan their courses that I thought I saw clearly where the difficulty lay and how simple and obvious was the next step, at least, in its solution. I published my finding in the January 29, 1916, issue of *School Science and Society,* under the caption "The Elimination of Waste

in the Teaching of High School Science", and I am able today to present some just published statistics which bear significantly upon the main point that I therein made, namely, that in high school education, as, indeed in our advanced education, the supreme question is not what is good and how can we get it in, but how, with the rapid expansion of human knowledge, can we find time for that which is absolutely essential?

General Science a Waste of Time for Some. For students who take the full high school course, I showed that it is a practical impossibility to get in more than three years of science any way, and that our whole energies ought to be directed to the arrangement of the curriculum so that we can get as many of the pupils as possible to take three consecutive years of science and then to pack all the real science that we can into those three years. I showed, as I thought, conclusively, that for pupils who could take those three years it was a pure waste of time to put one of them into a general science course, not merely because they would get the whole content of such a course in the special sciences, and get it in a much better way, but because the special sciences can easily be arranged in such a way as to gain all the advantage that has ever been urged for general science without the waste of a precious year of time in an already overcrowded curriculum. I quoted the best of educational authority to show that the place of General Science is in the grades. It belongs to the ages ten, eleven, and twelve, and incidently it seems to me that there is an outstanding opportunity for the development of such a course altogether unlike the present courses, which are mainly excerpts from the courses in the individual sciences. If General Science is to remain in the high schools at all, instead of being pushed over into the grades, it should be largely, if not exclusively, for those who cannot finish the high school course and, therefore, would have no opportunity to get more and better science. The exigencies of a high school curriculum do not permit it to be an introduction to a three-year course in the special sciences.

When ten years ago I showed Professor Otis Caldwell, now of Columbia University, one of the authors of a General Science text, my analysis, demonstrating, as I thought, that the only effect upon those taking the full high school course which the introduction into the high school of a general science course could possibly have would be to substitute General Science for one of the three more valuable courses in the special sciences—biology, physics, or chemistry, his reply was, "Far from it. If I thought that, I myself would be its most deadly enemy. It is rather actually going to stimulate interest in the special sciences and increase their registration."

Changes in Science Enrollment. Some studies presented by Mr. W. R. Leker in the October number of *School Science and Mathematics,* page 730, will be of interest on this point. These came to my desk only last week. The table from which I quote the following figures is entitled, "The Changes in Science Enrollment in Minnesota for the Five-Year Period from 1915 to 1920", and this table shows that the percentage of

the total enrollment had changed in these five years as follows: In general science from 1.2% to 11.5%, a gain of 858%; in physics from 10% to 7.8%, or a loss of 22%; in chemistry from 11% to 9.7%, or a loss of 12%; in biology from 1.7% to 1.8%, or a gain of 6%; in zoology from 6% to 2.9%, or a loss of 51%; in botany from 10% to 6.2%, or a loss of 38%; in physiology from 7.5% to 6.3%, or a loss of 16%. The totals in all these courses had changed from 47.4% to 46.2%. These figures then show precisely what they were expected to show according to my analysis made in 1915, that there has been no gain in percentage of those taking science—a slight loss—while the quality of the science taken has deteriorated, since there has been a gain in the elementary and descriptive and a loss in the more advanced and more thorough sciences. General Science has made its large gain of 858% wholly at the expense of the individual sciences. I have seen no statistics on this point from other states, but these are surely enough to warrant precisely the opposite conclusion to that drawn by Mr. Leker, that opposite conclusion being that General Science in the high school should never be a course which is required of all pupils.

The Science Situation Grave. I need scarcely say more to show that the problem of secondary school science is exceedingly grave, not because of consideration of interest in the subject by the pupils, so far as these figures show, but solely because of the way the high school curriculum has been organized and the advice from the high school office that has been passed on to the students as to the courses in which to register. These are, in my judgment, the main influences which determine what students take in the high school.

The Spirit of Science. But suppose all these faults were rectified and every student who went through the high school took a definite, consecutive, well organized, well taught three-year course in science, such as I am urging that he be given both the opportunity and the advice to take, then, how much of the spirit and the method of science, which Pasteur and Wells and Spencer and Eliot and Rose feel to be so indispensable to the world's progress, would he be likely to get? That brings me to the third element in the problem and to my last conclusion.

The Training of Science Teachers. My fifth conclusion is that the third element, that having to do with the selection and training of the high school science teacher, has scarcely yet been touched, any more than has the second element, that having to do with the arrangement of the science curriculum. For it is altogether clear that a man cannot inspire in the high school pupil and pass on to him the spirit and the method of science and get him to begin to use it in his daily living unless he himself understands that spirit and himself knows how to use it. Where is that understanding to be obtained? The answer is as obvious and as inevitable as breathing. Not by talking about scientific method, but by getting into close touch with science itself; by absorbing its method and its spirit through actual contact with it and through practice in using

it. Where is that contact to be had? Obviously in the great centers of scientific activity of the country; in the graduate schools of science where the prospective teacher can obtain not only a thorough grounding in the fundamentals of mathematics, physics, chemistry, biology, and geology, but can also gain some insight into, some little contact with the method, the spirit, and the significance of scientific research; where he himself can catch by its use a little of that objectiveness, that integrity, that patience, that thoroughness, that veracity, that self-detachment, that discrimination, that self-abrogating vigor of criticism which Wells so clearly saw and so eloquently described as the modern science and the need of every other human affair.

Loose Thinking too Common. The following incident will illustrate one little element of what I have in mind. I recently heard a professor in one of our best known schools of education tell a class, and then made them tell him, that magnetism is not matter, that it is energy. He might quite as well have made them say that a sunbeam is an elephant, for the dimensions of magnetism are not those of energy; it is a different kind of quantity. It is precisely that sort of looseness of thought and speech, that talking without knowledge, that failure to define terms or to think carefully about their meanings before making assertions which contact with real science ought to teach one to avoid.

Allocating Responsibility. The task and the responsibility of supplying to the secondary school the science teachers who are to lift the whole level of the thought and the life of the next generation because they understand and are imbued to some extent, at least, with the spirit of modern science, that task and that responsibility belong to us who are associated with the graduate centers of science of the country, just as the science curriculum in the schools belongs to you superintendents, and up to the present we have done about as little with our task as you have with yours. Both of us have at the moment an immense opportunity. We can help you a little with advice on your problem, and I could go into definite suggestions as to details if you wanted them, and you can help us in our work of training future scientists for the secondary schools by removing, ignoring, or modifying your administrative restrictions and pedagogic requirements which now actually operate, whatever their intent, to divert the best trained and the best qualified young men whom we can turn out away from the secondary school altogether.

Pedagogic Handicaps. I am speaking at the moment of conditions existing in this state. I have myself never before met them elsewhere, for in every other part of the country in which I have worked every inducement has been made to draw the best possible material from our university departments of science into the science field of the secondary school. Further, I take a particular illustration from many to show precisely what the present situation is. Men who have been trained in the scientific center which exists at the California Institute of Technology are at this moment being sought by the secondary schools in other parts

of the country, though they are prevented at present by administrative restrictions from getting into the California schools. One of the finest suburbs of New York sent this summer to the Norman Bridge Laboratory of Physics to obtain a man who had had the training and the contact with modern science which is found there, to take an initial salary of $3600 as the head of the science work in that high school. Fortunately, we had the man and he was at once accepted and has begun his work in New York. This man, with superb qualifications, would have been ineligible in the California schools, while men with one-twentieth of his qualifications for successful science teaching would have been acceptable. Indeed, I do not suppose that one-tenth of our science faculty at the California Institute would be allowed to teach in the public schools of this state. I could not qualify myself. But I suspect that this is merely a local maladjustment to which a satisfactory solution can be found.

Training of Science Teachers Contemplated. That the California Institute of Technology is alive to its opportunity and its responsibility as an outstanding center of science and scientific progress, to do something constructive in the third element, is shown by the fact that it has at the moment under discussion in its faculty a special program for the adequate training of the science teacher of the future. That "program contemplates for the first time in this country", to quote from Dr. Noyes, "the right kind of a course to prepare students for science teaching, for the present university courses are far too superficial on the science side and overdone on the pedagogic side". That program by no means contemplates the training of narrow specialists, but first and foremost it does contemplate the imparting of a thorough familiarity with and understanding of the fundamental subjects of mathematics, physics, chemistry, geology and biology, and some contact with research work in these fields. But not merely that; it contemplates, also, imparting a contact with the world's best thought through adequate work in literature and philosophy, and an understanding through prolonged study in history, of how man has reached his present stage of development. It involves, also, courses in psychology, ethics, and the history of education, such as now required by the state law.

I am not at all protesting against courses in psychology and ethics and the history of education; I am not disposed to discuss the question as to whether they represent one-half of one per cent or two per cent of the necessary educational equipment of the successful teacher. I am merely asserting, and in this I think you will all agree with me, that the secondary school science teacher of the future must be primarily a man who understands science itself and can impart its spirit and its method to those who come in contact with him, and thus assist in the supreme task of "carrying over that method into every other human affair".

The reader will now find a discussion of Dr. Millikan's paper from the viewpoint of a Professor of Education, a High School Principal, and a High School Teacher of Science.

EDITOR'S NOTE.

THE SCIENTIFIC METHOD IN EDUCATION

CHARLES E. RUGH
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EDUCATORS should welcome and encourage expressions concerning education from eminent men and women in every fundamental form of human interest and endeavor. First, because education at its best must take account of every contribution to human experience; second, to be at its best education must have the active and hearty confidence and co-operation of eminent men and women; and third, it will be good for these eminent men and women to focus their attention upon education as a fundamental social enterprise.

In this particular case a pre-eminent scientist has given expression, not concerning science in general nor education in general, but about "The Problem of Science Teaching in Secondary Schools". Being a great scientist, the author will expect his treatment of this problem to be examined from the standpoint of the data used and the logic employed.

Critical Questions Asked. Those men and women who are trying to approach the problems of schooling in the scientific spirit and by the method of science are asking critical questions about data and treatment of data. Three related questions are asked concerning data — sources, validity and completeness.

1. The problem of sources is important not only because sources throw light upon validity, but also in the interest of what Dr. Lange termed "Syndicated Research".

2. Concerning the importance of the validity of data there can be no question, but since there is a procedure in education as well as a process, in addition to the truthfulness of data, validation is concerned also with the possible application or usefulness of data.

3. Completeness of data in matters educational looms as a problem of supreme importance. Schooling is the most complex procedure in which human beings engage. All essential factors—and there are many—must be considered.

Concerning the Data. In each of the above respects it is easy to point out Professor Millikan's failures. Scientists usually claim that their data and treatment must be impersonal. It is interesting that the first data given is from authority, including his own fitness to treat this prob-

lem. He admits that the other authorities are academic and suggests that it may be necessary to discount their testimony "fifty per cent".

It is a little unusual for scientists to state conclusions without having presented data supporting such conclusions. It is more than doubtful whether there could be found any data to support Professor Millikan's fifth conclusion—"Perhaps ninety-five per cent of the effort which has been expended upon this problem has thus far been devoted to the first element—the technique of teaching." That is certainly not true at the University of California. Those preparing to teach science study science five years and only two hours of one semester are given to technique of teaching science.

Professor Millikan's characterization of "General Science" is both unfair and inadequate—unfair in describing it "mainly as excerpts from the special sciences", and quite inadequate in limiting it to the movement of which he was a part. Dr. Harris developed both the theory and practice of general science in the schools of St. Louis long before the movement described by Professor Millikan. Dr. O. P. Jenkins and Miss Chapman developed general science in Oakland quite independent of this movement.

Concerning the Logic. The author treated the data concerning "secondary education" as if it were natural phenomena—"the same yesterday, today, and forever". He quotes parts of a table from *School Science and Mathematics.* He treats these figures as if they dealt with fixed natural phenomena and concludes: "General science has made its large gain of 858% wholly at the expense of the individual sciences". There is no evidence whatever in these data nor in the article from which they were taken to warrant this conclusion. Mr. Leker's conclusion is valid. The figures show increase in general science and decrease in some special sciences.

There is no evidence in the figures to warrant Professor Millikan's conclusion and the chances are very many to one that the conclusion is not true. In the first place these figures were for the years 1915-1920, the period of disturbance by the war. Many things have happened both in general and special sciences during the last five years. What would Professor Millikan say of a person treating modern physics and chemistry and omitting "relativity", "quantum theory" and "Millikan rays"? The figures under consideration give no allocation of the enrollment as to grades. There is no hint as to whether there were any junior high schools. The high gain in general science may well have been because certain schools introduced it for the first time. There may well have been vocational courses shunting junior and senior students from physics and chemistry. In short, there is nothing in those figures to make it possible to know the relations between general science and the special sciences in the schools of Minnesota, and still less reason for thinking they apply to other states, particularly to California.

Other Factors Involved. Professor Millikan ignores the psychological and sociological factors involved in his problem. This removes his treat-

ment from the right to very serious respect. It should be noted, however, that he discovered the "grave situation" only when he "began to study the high school curriculum for the sake of advising my own boys how to plan their courses". Professor Millikan should have noted that sociological fact and given credit to educators who are *in loco parentis.*

There is another surprising contradiction in the address that should be noted, since it bears upon the specific recommendation of Professor Millikan. He complains that "Men who have been trained in the scientific center which exists at the California Institute of Technology are at this moment being sought by the secondary schools in other parts of the country though they are prevented by administrative restrictions from getting into the California schools".

Training of Science Teachers. The author later says that the Institute contemplates "a special program for the adequate training of the science teachers of the future—'that program contemplates the first time in this country', to quote from Dr. Noyes, 'the right kind of course to prepare students for science teaching, for the present university courses are far too superficial on the science side and overdone on the pedagogical side'." The author then adds: "It involves, also, courses in psychology and ethics, and also in the history of education, such as are now required by the state law", which in the above paragraph he termed "administrative restrictions". There is another implied contradiction that needs illumination. If it takes the extended centers of research to instil the scientific spirit and method in these prospective teachers, what hope is there to "impart the scientific spirit and method" to adolescent youth in three years?

The Commission on the Reorganization of Secondary Education proposed three sets of data for constructing an adequate theory for secondary school procedure: (1) The nature and needs of the learner at his particular stage of development; (2) The society in which the learner lives and the society in which he will probably live as an adult; and (3) The available means for education. If Professor Millikan had used these suggestions, he would have avoided some unnecessary mistakes.

Problem of Science Teaching. Concerning this problem of science teaching in the secondary schools, three somewhat different but closely correlated problems face us:

First, the reformulation of the objectives of secondary education so as to suggest the need and place of science in school procedure. To start with, we might accept Professor Millikan's stated objective—"preparation for rational scientific living and thinking". By careful analysis of this objective a large and important place for scientific information and scientific technique would certainly be found.

Second, an analysis as scientific as possible of the abilities and dispositions of high school pupils and also a scientific analysis of the information and technique suitable to these pupils.

Third, the co-ordination and integration of ways and means into an

educational procedure that will insure the highest possible development of personality and also secure social progress.

Educators may well join Professor Millikan in his enthusiasm for more and better science teaching and he will find that the State administration will meet the Institute of Technology more than half way in the proposal to train adequately the science teachers of the future.

Whitehead on Training Professionals. Professor Whitehead's statement concerning "training professionals" needs to be heeded by those training teachers for any public school service:

"Another great fact confronting the modern world is the discovery of the method of training professionals, who specialize in particular regions of thought and thereby progressively add to the sum of knowledge within their respective limitations of subject. In consequence of the success of this professionalizing of knowledge, there are two points to be kept in mind, which differentiate our present age from the past. In the first place, the rate of progress is such that an individual human being, of ordinary length of life, will be called upon to face novel situations which find no parallel in his past. The fixed person for the fixed duties, who in older societies was such a godsend, in the future will be a public danger. In the second place the modern professionalism in knowledge works in the opposite direction so far as the intellectual sphere is concerned. The modern chemist is likely to be weak in zoology, weaker still in his general knowledge of the Elizabethan drama, and completely ignorant of the principles of rhythm in English versification. It is probably safe to ignore his knowledge of ancient history. Of course I am speaking of general tendencies; for chemists are no worse than engineers, or mathematicians, or classical scholars. Effective knowledge is professionalized knowledge, supported by a restricted acquaintance with useful subjects subservient to it.

"This situation has its dangers. It produces minds in a groove. Each profession makes progress, but it is progress in its own groove. Now to be mentally in a groove is to live in contemplating a given set of abstractions. The groove prevents straying across country, and the abstraction abstracts from something to which no further attention is paid. But there is no groove of abstractions which is adequate for the comprehension of human life. Thus in the modern world, the celibacy of the medieval learned class has been replaced by a celibacy of the intellect which is divorced from the concrete contemplation of the complete facts. Of course, no one is merely a mathematician, or merely a lawyer. People have lives outside their professions or their businesses. But the point is the restraint of serious thought within a groove. The remainder of life is treated superficially with the imperfect categories of thought derived from one profession.

"The dangers arising from this aspect of professionalism are great, particularly in our democratic societies. The directive force of reason is weakened. The leading intellects lack balance. They see this set of circumstances, or that set; but not both sets together. The task of co-ordination is left to those who lack either the force or the character to succeed in some definite career. In short, the specialized functions of the community are performed better and more progressively, but the generalized direction lacks vision. The progressiveness in detail only adds to the danger produced by the feebleness of co-ordination."—*Science and the Modern World,* Whitehead.

INFLUENCE OF GENERAL SCIENCE IN THE CURRICULUM

DR. WM. H. SNYDER
Principal, Hollywood High School

IT IS tremendously encouraging to those of us who are interested in secondary school education to find a man with the training, experience and insight of Dr. Millikan giving his attention to the problem of school science. The greatest hope for the schools is that men of marked ability and honest sympathy will investigate what is being done and will suggest improvement. The boys and girls who must meet the complex problems which are up for solution deserve the best training and guidance that the wisest can give. Dr. Millikan's paper is, therefore, most welcome.

Changed Conditions Affecting Curricula. Practically all of us who are especially interested in the problem of secondary school science will agree in general with Dr. Millikan's thesis. There are certain changes, however, which have taken place in the high school during the last decade which have strongly influenced the choice of subjects and which, perhaps, Dr. Millikan does not fully appreciate. This has been an era of tremendous expansion in high school curricula and vast increase in pupil attendance. The character of the student body has also changed markedly during this time. The high school is no longer made up of a selected group. A large majority of the elementary school graduates now find their way to high school. In our own state it is practically compulsory that they attend for at least part of the course.

Many of the pupils now going to high school have no scholastic traditions and they demand that the subjects studied shall be of immediate vocational value. Commercial and manual-skill subjects have increased enormously. Social science, with its vague boundaries, its elusively checkable data, and its humanistic appeal attracts today an ever increasing number of devotees. Music, art, and dramatics add their appeal. In fact, the curriculum is filled with such a plethora of attractive subjects that the average pupil finds choice most difficult. Even for those desiring to go to college, particularly outside of the New England environment, there is great freedom of election.

Home conditions make it more and more difficult for pupils to take subjects which require continuous and persistant application. Lunch counter methods are necessary to obtain their physical and also their mental pabulum. Subjects that can be acquired a "hunk" at a time are best fitted to their environment. It takes a strong and wise teacher to thwart environmental adjustments. Physics and chemistry are not good "lunch counter" materials, and yet, according to United States Bureau of Education Bulletin No. 38, 1924, chemistry has almost held its own, notwithstanding the competition of other subjects.

Statistical Comparison of Little Value. The broadening of the curriculum, the change in the student body, the allurement of certain sub-

jects, change in home conditions and in social environment, as well as other causes have markedly affected the study of science in the high school during these last ten years, and have made a statistical comparison of the effect on chemistry and physics of the introduction of general science into the curriculum, of little value. It would, therefore, seem that the data quoted by Dr. Millikan from Mr. Leker are not adequate to show that the introduction of general science has effectively decreased the number of those taking advanced science. There have been other and more potent causes. In fact, there is good reason to believe, as shown by Mr. Geo. W. Hunter, *School Science and Mathematics,* November, 1925, that the number of students taking science has been greatly increased by the introduction of general science, and that the interest aroused by this subject has increased the interest taken in advanced science. Miss Elizabeth L. Bishop has shown in a paper published in the CALIFORNIA QUARTERLY OF SECONDARY EDUCATION, October, 1925, that there has been a gradual increase in California, during the last ten years, in the number of schools giving chemistry and physics; and that, apparently, the rapid increase in general science and biology has not lessened the rate of increase of the other two sciences.

Some Direct Evidence on General Science. In order to get a bit of direct information in regard to the effect that the study of general science has had upon the study of more advanced sciences in the Hollywood High School, Mr. C. M. Westcott of our faculty gave the questionnaire appearing below, to as many as possible of our pupils who had taken eleventh or twelfth year science. His tabulation of the results are rather interesting and indicate that general science is not the fierce dog in the manger that Dr. Millikan fells it to be. It appears that seventy-five per cent of the pupils who have taken advanced science were helped by general science, that nearly eighty per cent would take it if they had it to do over, and that less than five per cent were kept from taking another advanced science because they took general science. All pupils of the school must take at least one advanced science.

QUESTIONNAIRE ON GENERAL SCIENCE

DO NOT SIGN

Roll-call grade ..... Roll-call room .....

1. Have you had General Science?.....
   If so, where?..... What grade did you make?.....
2. If you had it to do over again, would you take General Science?.....
3. Has taking General Science prevented you from taking other sciences?.....
   If so, what sciences?.....
4. Has General Science helped you in the study of other sciences?.....

SUMMARY OF DATA FROM GENERAL SCIENCE QUESTIONNAIRE

Classes	P. G.	12A	12B	11A	11B	Totals
Total numbers reporting	47	174	327	284	388	1220
Number who have taken General Science	17	84	138	127	181	547
Per cent who have taken General Science	36.3	48.2	42.1	44.7	46.6	44.8
Number who have not taken General Science	30	90	189	157	207	673
Per cent who have not taken General Science	63.8	51.7	57.8	55.3	53.4	55.2
Number who would take General Science if they had it to do over	12	71	117	98	135	433

Per cent who would take General Science if they had it to do over	70.8	84.5	84.7	77.1	74.6	79.1
Number who would not take General Science if they had it to do over	4	13	21	29	41	108
Per cent who would not take General Science if they had it to do over	23.5	15.5	15.2	22.8	22.6	19.8
Number prevented from taking other sciences by taking General Science	1	10	6	1	9	27
Per cent prevented from taking other sciences by taking General Science	5.9	11.9	4.3	.8	5.0	4.9
Number helped in other sciences by General Science	10	65	112	96	129	412
Per cent helped in other sciences by General Science	58.8	77.4	81.2	75.5	71.2	75.2
Number not helped	5	15	23	26	35	104
Per cent not helped	29.4	17.8	16.6	20.4	19.3	19.6

(The irregularities in percentages are due to erratic answers)

A TEACHER'S VIEW

MABEL B. PIERSON
Supervisor of Science, University High School, Oakland

DR. ROBERT A. MILLIKAN holds the highest place as a man of science and has always taken a great interest in forwarding the teaching of science in secondary schools, so that any suggestions which he makes are well worthy our serious consideration. All science teachers and most high school administrators agree with him that more science is needed and more well-prepared science teachers are desirable.

According to the careful studies of Miss Elizabeth Bishop, the percentages of science enrollment in four year California high schools in 1923-1924 were as follows: General science, 10.75; chemistry, 10.7; biology, 9.5; physics, 4.9; physiology, 2.7; botany, 1.3; physical geography, 1.2; zoology, .12; total, 41.17%.[1] This does not take account of the large amount of general science in the separate junior high schools, which would bring up the total considerably. These figures are similar to those for Minnesota. Dr. George W. Hunter of Knox College, in his 1923 study of sciences in representative high schools throughout the United States, found about the same general tendencies, with general science gradually extending into junior high schools. Out of 355 schools, however, 274 reported that more take biology, chemistry and physics now than fifteen years ago; only twenty-three reported fewer.

One Factor Neglected. There is one factor, however, which Dr. Millikan has neglected. Throughout the United States a much larger part of the population send their children to high schools now than when he was teaching in one. The majority are no longer of college type and we must give them the best possible preparation for their life work. The pre-vocational subjects have increased greatly and the percentage of all traditional subjects, including science, has decreased accordingly. These

[1] *California Quarterly of Secondary Education*, October, 1925.

facts make it practically impossible to apply any comparative statistics of the sort Dr. Millikan quotes unless we know just what proportion belong to the pre-college and pre-vocational types, and how many left school at the end of each high school year during the period studied.

Place for General Science. Science teachers in general will agree with Dr. Millikan's contention that the place for general science is in the junior high school in grades seven and eight. As a result of much experimentation, it has been found that pupils of this age are intensely interested in asking questions as to the why of every thing in their environment, and in carrying out observations and experiments to answer these questions. What is this but the scientific method? This is also the best time for them to gain a general view of all subjects, so that they may choose their future lines of endeavor. As fast as junior high schools are developed, we find that general science appears on their programs, and more and more as a required subject. It is obviously out of the question to give it effectively in the grammar school type of organization. We find from actual experience that most children are so interested that they desire to continue science studies.

It is true that three years is the maximum allotment to science for high school pupils in general. The two science conferences called by the *American Association for the Advancement of Science* in California this past summer passed resolutions to the effect that general science should be required in the junior high school, and biology in the tenth year of the high school. This would provide for the needs of those who are to drop out, and would leave plenty of time for others to elect one or two years of advanced science. This broad foundation of physical and biological science would do much toward that "preparation for a rational scientific living and thinking" which is the object of all education and especially of science education. It would not seem to the casual observer to be more needed in California than elsewhere. Minnesota, the state from which Dr. Millkan quotes his figures, has already recognized this need, and the State Board has recommended that biology should be required in the tenth grade and general science in the junior high school. The requirement of only one unspecified laboratory science in California is too low as compared with other subjects. The high school advisors find it difficult to place in the pupil's program all the general requirements with the demands of the special university and pre-vocational courses, hence, they naturally suggest the lowest possible limit of requirements.

Real Point of Difference. In the question of technique we come to a real point of difference between Dr. Millikan and the secondary science teacher. In his statements that we should "pack all the real science that we can" into the three years of high school and that "the quality of science taken has deteriorated since there has been a gain in the elementary and descriptive and a loss in the more advanced and more thorough science", he shows the point of view of the scientist, the builder of systems of classified knowledge, rather than that of the educator. It is this point of view which is really at the root of any loss of registration that may

have taken place in the advanced sciences, especially in physics since it has ceased to be a required subject.

Our recent studies of the levels of intelligence in the population at large and in our schools have shown that we have been attempting the impossible. The general science movement has succeeded because it has adapted the method and subject matter to the real needs, interests, and abilities of the pupils. We can no more describe it as inferior to advanced science than we can describe eighth grade English as inferior to twelfth grade. We have made our greatest advances in the teaching of science in general science and in biology.

Chemistry. In so far as we may be able to apply the same principles to the advanced sciences, we shall regain lost ground. Chemistry has already been re-organized on the basis of real educational values. Many superfluous facts are being weeded from actual teaching practice, if not from the text book, and the course has been applied to the real needs of our boys and girls. I attribute to this the fact that in California four year high schools there are as many taking chemistry as taking general science, more than twice as many as take physics.

Physics. The science of physics has gone forward with tremendous leaps and bounds and text book makers have tried to include all new knowledge possible without reducing the amount of the old, so that it has become impossible for the average pupil to grasp the subject in one year. Physics teachers recognize this fact and often refuse to admit any pupil below the highest level of intelligence. In advising pupils as to science programs, I often meet the response, "Yes, I know that I need physics for my chosen work, but I can't possibly pass it." It is fear, and not general science, which drives pupils away from physics. It seems to me that the only solution of the problem is to provide two kinds of physics classes. Those who intend being engineers and physicists should have a thorough grounding on the theoretical and mathematical sides of the subject, but the great majority of our students who are going into business and the professions should not be deprived of all knowledge of physics on this account. No one will deny that every educated person should have a general knowledge of its fundamental principles and their application, so that he may have some understanding of our modern environment and the great discoveries of our time. Perhaps a course could be arranged which would give this general foundation and which would meet the needs and different abilities of pupils. We should then have no trouble in getting pupils to take physics. There is a great demand for such a course.

Different Viewpoints. It is a different viewpoint about education that leads to Dr. Millikan's opinion of the worthlessness of the study of educational method. Many of us who went directly into the teaching field from the college laboratory and passed down to our pupils a somewhat diluted course just as we had received it, learned by slow and painful experience that we were not giving our pupils real education at all. There is an entirely different point of view in the young teachers who

now come into our schools from the university courses in Education and Directed Teaching. They have been trained to think of the pupil first and what he is gaining from their teaching. I know from actual experience that the extra year spent in this preparation saves them at least five years of unnecessary effort in adjusting themselves, and is of incalculable benefit to their pupils. In all other professions much more than one year of special training is required. It is open to doubt whether even a doctor's degree in science would insure that the recipient could step successfully into the headship of a science department of a California high school. Our great industrial organizations do not choose their heads of departments from the brilliant young college graduates, but demand a period of apprenticeship in which they make a study of the business from the ground up.

It will be a great step forward in this state if the California Institute of Technology decides to establish a course in the teaching of science. As Dr. Millikan has well stated, our greatest need is more well trained science teachers with the broad foundation of scientific and general education, as well as specialized knowledge of one particular subject. One reason often given by administrators for not requiring more science is the lack of available teachers.

A RECENT BOOK

Educational and Vocational Guidance is the title of a volume of recent issue by Dr. William M. Proctor, who made a report on this subject in the *Report of the Committee of Fifteen.* Dr. Proctor's new book comes from the press of Houghton Mifflin Company: XV. 352 pages. $2.00 prepaid. This book will be helpful to classroom teachers and principals in solving guidance problems. The chapter titles are:

I. Function of Guidance in Public Education.
II. Discovery of Learning Capacity by the Use of Mental Tests.
III. Factors Other than Intelligence which Contribute to Success in School Work and Vocations.
IV. Exploration of Special Interests and Abilities.
V. Organization of the Program of Studies for Guidance.
VI. Guidance through Provisions Made for Intellectual Differences.
VII. Guidance in the Selection of Subjects, Courses, and Curricula.
VIII. Guidance in Social and Civic Activities.
IX. Guidance in Health and Physical Activities.
X. Guidance in the Worthy Use of Leisure Time.
XI. Guidance in Character-Building Activities.
XII. Guidance in Making Vocational Choices.
XIII. Guidance in Acquiring Vocational Information.
XIV. Guidance and Placement in Relation to Vocational Education.
XV. The Organization of Guidance.

THE MODERN FOREIGN LANGUAGE STUDY

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ONE of the most encouraging tendencies of the present age is the interest taken by high school teachers in studying their profession scientifically. There is little doubt that research has been confined far too long to the college, and that for secondary education research in the field—in the school itself—is vitally important. There has been too little intensive investigation by individual high school teachers while they are still teaching. The best place for secondary research is in the classroom, although most teachers will need expert guidance in the technique of investigation and in the tabulation of results. Sometime, we trust, individual research, attempted on the job and carried to a successful completion, will receive due recognition both in university and in the local school situation. The great problem, which this magazine has attempted, is to generalize these individual practices and make them available for general use.

A Practicum in Education. Education 271, in the University of California, is a practicum in measurement in secondary education. Its members are largely high school teachers in the bay district. They have attempted several interesting problems, among which are "sectioning of classes in biology on the basis of the results of the Ruch-Cossmann biology tests"; "a comparison of the relative values of commercial arithmetic, algebra and general mathematics for developing general mathematical ability"; "the development of a projection scale for mechanical drawing"; "the development of a scale for scoring lettering for use in mechanical drawing"; "the development of a psychogram which will show at a glance all the necessary information about a pupil—for use by classroom advisors or deans"; "the development of a score card for the social efficiency of a high school pupil". All these and others have been worked up by the student in connection with his daily work in the high school.

Study of Achievement. Those members who were not working on individual problems decided to co-operate with the Modern Foreign Language Study in the study of achievement in French and Spanish under varying conditions. It was decided to test achievement over a wide spread of territory and to try to determine the general school factors that condition achievement, such as size of class, length of school period, type of supervision, training of teacher, method used, age of pupil when beginning the language, effect of previous language study, and the varying effects of different distributions of time between: translation, oral work, composition and grammatical drill. It was felt that these factors were so interrelated and depended so much upon external school conditions that a gross study of a wide sampling might yield different results than a carefully controlled experiment.

The Range of Study. Twelve city high schools of the district around San Francisco Bay were chosen for study. The high schools at Stockton, Alhambra, and Santa Barbara were added as being of similar size, but typifying different city conditions. Then a number of high schools in smaller communities, San Rafael, Richmond, Modesto, Victorville, Los Banos, Cloverdale, Covelo, and Sebastopol were asked to participate, as they typified still other conditions. There was to be no attempt made to compare city with city, or school with school, nor class with class, but merely to try to compile sufficient evidence of actual conditions of teaching modern foreign language so that achievement as conditioned by age of pupil, method employed, and other considerations, would become more or less self-evident by preponderance of evidence. It was planned to return the corrected tests ultimately to the teachers in whose classes the tests were made, together with tabulated results and graphic representations of the whole study, so that each teacher could make her own comparison with the norms and medians of the whole group. All the pupils finishing one year, two years, or three years of French and Spanish in these twenty high schools and twenty-one junior high schools were to be tested.

It was also planned to test all students in the University of California taking French or Spanish in the A, B, C, and D groups, both for the purpose of testing achievement at a later age and also for the purpose of direct comparison as to method and proper credit for high school achievement. The advanced classes have already been tested by Mr. Newby, of San Jose Teachers College, who is working on another problem for the Modern Foreign Language Study.

The Question of Credit. The whole question of credit for foreign language study at different levels in the school system ought to be considerably clarified by the results of this study. In so far as the scores are now available, one is impressed by the wide range of achievement. One pupil in Edison Junior High School in Berkeley tested one hundred on the Iowa Placement Test in Spanish. This score is above the median of the scores for second year college Spanish, which received several times as much credit. Sometimes such scores are due to home situation, sometimes to high intelligence, but whatever the cause, it would seem that proper credit should be based upon ability to do.

It is realized that no test yet devised gives proper credit for the results achieved by the direct method. No test, of the sort used in this study, can test pronunciation or comprehension of spoken language. But in so far as comprehension of written language is conditioned by these factors, one section of the test does apparently show, in the small group so far scored, that much oral work tends to raise the score on the comprehension test. The results as to vocabulary are not so clear.

A Co-operative Study. This study is a co-operative effort. The modern Foreign Language Study was instituted by the National Council of Education, with the co-operation of the United States Department of Education. The members of the seminar have given unstintingly of their

time, and in no instance has any school failed to co-operate with this program. Teachers of foreign language in the schools tested have submitted uncomplainingly to considerable inconvenience. The research departments of Oakland and Alameda have given much assistance. One cannot but be impressed by the willingness of all school people to further professional investigations.

Professor Henmon, of the University of Wisconsin, has suggested that it would be highly desirable to try out in the same class the three principal tests used in this study. If any teacher of French or Spanish desires to make this contribution to the study, and will communicate with the author, the tests will be furnished and arrangements made for a testing program. Any suggestion as to desirable means of measuring foreign language teaching this coming term will be welcomed. It is hoped that all teachers interested in this work will feel free to call upon this group for any assistance they may give.

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ACHIEVEMENTS OF CALIFORNIA HIGH SCHOOL SENIORS IN READING COMPREHENSION, VOCABULARY, AND SPELLING

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The Problem and the Purpose of the Study

RESEARCH studies previously made in the comprehension of the printed page have shown a wide range of attainment for pupils in each of the several grades. In fact the average attainment for all of the seniors in certain high schools has been shown to be inferior to that of the average of freshmen in other high schools in the same and in other states. This wide variability in reading comprehension suggests that this important aspect of attainment in English should be considered as to its claim for a place in the curriculum, as to the degree to which this ability is attained by the graduates of our own secondary schools, and as to the means which may be employed in making a real mastery of the printed non-technical page an attainable goal for high school graduates.

Since citizenship in a democracy places upon normal adults the responsibility of deciding certain issues of importance to the city, state, and nation, and of selecting leaders who will function in a faithful and able manner in terms of the greatest good to all, it follows that the ability to gain from printed matter an understanding of the issues at stake is an ability of civic importance. From a vocational point of view, too, ability to read printed books, magazines and daily papers conditions the economic, industrial or business success of the worker. Finally, the worthy use of leisure, an item of increasing importance in American life today, is attained in no small measure through the reading of good literature of a variety of types. From the above considerations it appears that adults in modern American life do read, and that reading is coming to hold an increasingly prominent place in vocational, civic, and leisure time activities. It has been estimated that approximately 95 per cent of the reading of the average adult is, and should be done silently. On the contrary, constructive critics of the school curriculum procedure note that current class room practice gives less than 5 per cent of class room time to training for skill in silent reading. Apparently a minimum of attention is given in school to a very important type of activity which adults are certain to pursue with varying degrees of success.

The technique of silent reading has been studied critically by Huey,

by Judd and Buswell, by O'Brien, by Stone, by Smith, and others. A selected list of references on researches in and the mastery of silent reading habits is given at the close of this article. Though essential to the success of high school students in reading it is not the purpose of this paper to discuss the means by which skill in reading can be attained, but rather to show the need for centering attention on the reading problem in California secondary schools. In the opinion of the writers, conviction as to the need for a shift in the emphasis placed on the several divisions of English will come from an examination of the wide variations in pupil achievement found in reading comprehension among California high school seniors.

Method Employed. In this study it has been the privilege of the writers to collaborate with Mr. A. C. Olney, Commissioner of Secondary Schools in California. The investigation had its inception in the consciousness of Commissioner Olney as to the need for an extensive study of the English abilities of secondary school pupils. Upon the recommendation of Professor Touton a decision was reached as to the nature of the tests to be used and as to the manner in which they should be administered. Commissioner Olney was responsible for the purchase of the tests, the selection of schools to be studied, and the administration of the tests.

In this brief report on one portion of the study the detailed findings will not be presented for the schools separately, but rather it is our purpose to contrast the average achievement for each school with that of the composite group and with the norms set by the makers of the standardized tests employed. Finally, consideration will be given to the interrelations of the three phases of English ability here reported.

Though the cases studied for each school give an unreliable basis for comparison of the work of the several schools, yet the composite group is sufficiently large and unselected so as to afford a reliable basis on which to draw conclusions regarding the achievement in Reading Comprehension, Vocabulary, and Spelling for California secondary schools.

Materials Used. In this study the Thorndike-McCall Reading Scale was used as the best available means of measuring Reading Comprehension of high school students, the Inglis Vocabulary Test as the best measure of the mastery of word meaning, and the Seven S Spelling Scale as one of the best measures of pupil ability in spelling.

The 1137 test papers written by the pupils, and used in this study, include 360 Reading Comprehension tests, 360 Vocabulary tests, and 417 Spelling tests. The test materials utilized are standardized, highly objective, and widely used.

As definite instructions were supplied to each teacher conducting each test, and since the scoring was done with reference to the elements of an objective scale, personal opinion in no way influencing the outcome, the results obtained may be looked upon as reliable measures of the achievement in certain elements of High School English. Where directions for conducting the tests were not definitely supplied by the authors of the

test used, these directions were worked out and supplied to the teachers. Under these standardized conditions the pupils of the several schools took the several tests.

Brief Description of the Tests Used. In testing reading comprehension use was made of the Thorndike-McCall Scale for the Understanding of Sentences, Form 2. This test has had extensive use and for it reasonably satisfactory norms have been established. The test contains twelve paragraphs of reading material. Following each paragraph is a list of from two to four questions, which the pupil is required to answer, and which reveal the ability of the pupil to comprehend the meaning of the sentences forming the paragraph. In all, thirty-five questions are asked. Correct answers only are counted. The number of correct answers is then expressed in terms of units given for the reading scale.

In testing vocabulary achievement, the Inglis Vocabulary Test, Form A, was used. This test, though new, has also been widely used and for it reasonably satisfactory norms have been established. The test contains 150 sentences each of which has an italicized word. To the right of each sentence are five words, each varying in similarity of meaning from the italicized word in the given sentence. The nearest equivalent to the italicized word is to be underscored by the pupil. Correct answers only are counted. The sum of correct replies is ascertained for each pupil and presented in a score of percentile correctness. This test was designed to measure the pupil's knowledge of the "General Reader's" vocabulary; that is, an understanding of those words which belong neither to our everyday vocabulary of commonest words, nor to special and technical vocabularies, but which constitute a large part of the vocabulary of the general reader. It is designed primarily to test the pupil's reading vocabulary rather than the vocabulary made up of words used in oral or written expression.

In measuring spelling achievement, the test used was the Seven S Spelling Scale,[1] lists XIII to XVI inclusive. This scale was constructed by Hudelson, under the direction of Doctors Briggs and Kelley, and has been given to some 46,000 secondary school pupils and thus standardized to an extent which makes it highly reliable. This test contains eighty sentences, each of which has an italicized word. The sentence is read aloud to the pupils and the italicized word is repeated. This brings clearly to the pupil the word to be spelled and the meaning it is to convey, thereby eliminating the possibility of a misconception of the exact word to be spelled. The score attained by each pupil is the percentage of correctly spelled words. This score is then interpreted through contrasting it with the norms established by the makers of the test.

Reading Comprehension

Distribution of Scores in the Composite Group. The following table shows, for the several group intervals, the frequency and the percentage of frequency on each of the levels of achievement in the comprehension of

[1] Teachers College Record, Vol. XXI, 1920.

the content of English sentences and paragraphs as presented on the Thorndike-McCall reading scale. Measures of central tendency and variability have been computed for the scores as grouped on five point score levels and are here given:

TABLE I—SHOWING THE DISTRIBUTION OF SCORES IN READING COMPREHENSION OF 360 CALIFORNIA HIGH SCHOOL SENIORS

Score Levels	*Frequency*	*Per Cent on Each Level*	*Measures*	
35 to 39.9	1	0.3	N	360
40 to 44.9	0	0.0	Mode	62.5
45 to 49.9	9	2.5	Range (actual)	36.0—86.0
50 to 54.9	18	5.0	Median (P50)	64.6
55 to 59.9	51	14.2		
60 to 64.9	114	31.7	P10—P90	55.8—76.2
65 to 69.9	63	17.5		
70 to 74.9	48	13.3	P25—P75	60.4—70.4
75 to 79.9	42	11.7		
80 to 84.9	8	2.2	Mean	65.7
85 to 89.9	6	1.6	S. D.	8.0

The table should be read as follows: On the score levels containing the scores between 35 to 39.9, the score of one pupil is found, which is 0.3 per cent of the scores of the Composite group. Each of the other frequencies should be interpreted in the same manner.

In interpreting the data presented in Table I, it should be noted that while the mean score for this group of 12 H[2] pupils in reading comprehension is 65.7, the norm for 12 H pupils is 68.1. From this fact it is seen that the mean score (65.7) for this group of seniors is somewhat below the standard norm. In terms of standard norms for the several grades, as presented in the Thorndike-McCall Reading Scale, the mean reading comprehension achievement of this group is slightly above that of 11 H pupils. This shows a retardation in mean achievement of one grade for this Composite Group of high school seniors.

One of the significant facts shown on Table I is that 64.4 per cent, or 232 pupils out of a total of 360, are below their grade norm, whereas approximately 50 per cent, only, should be found below the standard norm.

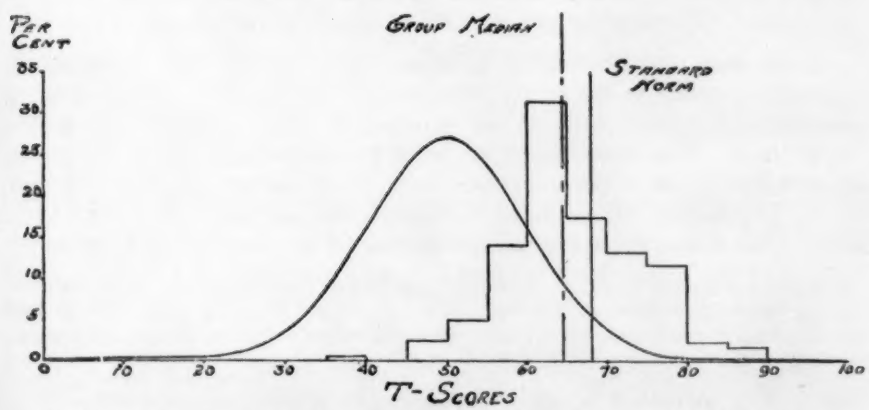
The several measures of spread of reading ability when interpreted in terms of the mean norms or average abilities for the several grades reveal the following significant facts: (1) The range "36.0 to 86.0" shows that the spread of abilities in reading for the group of seniors extends from that of the average third grade pupil to a point considerably beyond the average of a group of 300 superior teachers; (2) the range P10-P90 (55.8-76.2) indicates that the reading abilities of the middle 80 per cent (eliminating the 10 per cent at each end of the distribution) range from the average of the 7 L[3] pupil to a point beyond that of the average of 300 superior teachers; and (3) the range P25-P75 (60.4-70.4)

[2] 12 H should be interpreted to indicate the upper half of the twelfth grade.
[3] 7 L should be interpreted to indicate the lower half of the seventh grade.

indicates that the reading abilities of the middle 50 per cent of this group of 12 H pupils extends from a point slightly below that of the mean of 8 H pupils to a point mid-way between the norms for 12 H pupils and superior teachers.

The following graph presents the distribution of scores for this group of seniors and makes possible a comparison of the achievement of a normally distributed group of twelve year old pupils and the median achievement of the Composite group.

GRAPH I SHOWING THE PERCENTAGES OF THE COMPOSITE GROUP ON THE VARIOUS SCORE LEVELS AND CONTRASTING READING ACHIEVEMENT WITH THAT OF A NORMALLY DISTRIBUTED GROUP OF TWELVE YEAR-OLD PUPILS



In the foregoing graph a piling up appears on the scores below the standard norm which is accounted for by the fact that the mean score is below the standard norm. Also it appears in the above graph that in a normally distributed group of 12 year olds, 6 per cent excel the median score (65.7) of this group of seniors. This per cent of 12 year olds who surpass the score of 65.7, is nearly two times as great as that found by Thorndike and McCall for their 12 H group.

Range of Reading Retardation. Table II shows the range of reading retardation within the Composite group as interpreted in terms of grades or years.

TABLE II—SHOWING THE RANGE OF RETARDATION IN READING COMPREHENSION IN THE COMPOSITE GROUP OF 12 H PUPILS

Amount of Retardation Measured in Grades or Years	*Score at Which Each Amount of Retardation Begins*	*Per Cent of Group Having Each Amount or More*
9	37.3	0.1
8	41.8	0.3
7	48.0	1.8
6	53.7	6.5
5	58.3	17.2
4	60.9	27.7
3	62.1	35.3
2	63.6	44.8
1	65.4	55.1
0	68.1	64.4

The table should be read as follows: One-tenth of one per cent of the group under consideration has a retardation in reading comprehension of 9 grades (or years) below their present classification, or a reading achievement equal to that of 3 H pupils. Hence, 0.1 per cent of this group are retarded 9 or more grades (years) in reading comprehension. Each interval of retardation should be interpreted in the same manner.

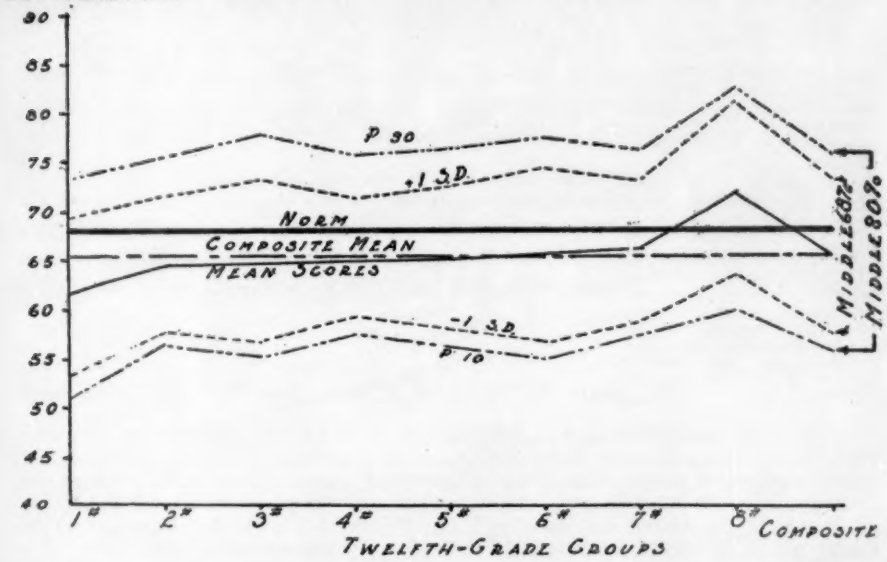
While the total group mean score shows a retardation of 1.0 grade (year), the above table reveals a retardation from 0 to 9 years (grades) for that portion of the group below the norm; 55.1 per cent being retarded one or more years; 44.8 per cent, two or more years; 35.3 per cent, three or more years; 22.7 per cent, four or more years; etc. The mean retardation for that portion of this group which is below the norm (68.1) is 4 grades (years), showing a mean achievement for this group equal to that of 8 H pupils. This fact becomes significant when one recalls that 64.4 per cent of the composite group of 12 H pupils are so placed.

Comparison of Schools as to Mean Achievements and Variabilities. Though recorded in the study from which the report is taken, detailed mention is not here made of the variation in mean achievements within each school. Two measures of variation in achievement among the pupils of each school and of the composite group are presented graphically below.

In addition to the limits of the middle 80 per cent (P10-P90), this graph also shows the limits of the middle 68 per cent of each group by indicating the points fixed by applying the score span of 1 S. D. up and down from the mean score for each school. The composite group and the standard grade norm, are also shown. From this chart a comparison of the mean score of each school can be made with the mean score of every other school, with the composite group, and with the established norm. Again a comparison of the variability of each school can be made with the variability of every other school and with that of the composite group.

From Graph II it appears that the mean scores for seven of the eight schools considered and for the composite group are below the standard norm (68.1). Also, six of the eight schools considered are approximately equal in mean scores and therefore in points below the norm; while the mean score of one school is noticeably above the composite group mean score and also above the standard norm. In one school 78 per cent of the group is below the standard norm, which accounts for the fact that this same school is shown in the graph to have the "+1 standard deviation" limit falling near the standard norm. The least variability for the middle 68 per cent of a group is 12.2 points and the greatest is 18.0 points, with an average spread of 8 points which exceeds slightly the difference in mean achievements shown by 6 L and 12 H groups in reading comprehension. It must be remembered, also, that this is the difference shown within the middle 68 per cent of the group only, and does not include the 16 per cent above or the 16 per cent below these limits.

GRAPH II SHOWING THE T-SCORE NORMS WITH MEASURES OF CENTRAL TENDENCY AND VARIABILITY FOR THE SEVERAL GROUPS.



The graph should be read as follows: The line, ———, shows the standard score norm, which is 68.1. The line, —— — ——, shows the Composite group mean score, which is 63.8. The lines, - - - - -, + 1 S. D. and — 1 S. D. show the upper and lower limits respectively of the middle 68 per cent of the several school groups considered. The lines - - ——— - - -, P10 and P90, show the upper and lower limits respectively of the middle 80 per cent of the several groups considered. The line, ———, shows the mean reading scores for the several schools. One school has a mean reading score of 65.4, which is 2.7 points below the standard grade norm and 0.3 point below the Composite group mean score. The middle 68 per cent of this school group falls between the score limits of 72.7 and 58.1. From this it appears that not all, though nearly all, of the middle 68 per cent of the group fall below the standard norm. The records for each school should be interpreted in the same manner.

A Comparison of the Mean Score for the Composite Group with the Standard Grade Norms. The following table shows the T-score norms established by Thorndike and McCall for the several grades and gives the percentages of 12 H pupils, from the eight California high schools studied who exceed each grade norm. The table also shows the mean T-scores for the several grades from ten Miscellaneous Cities in the United States, as quoted by Thorndike and McCall; and the percentages of 12 H pupils from the eight California high schools studied who exceed the standards set for the several grades in these ten cities.

TABLE III—SHOWING THE PERCENTAGES OF 12 H CALIFORNIA PUPILS, IN THE EIGHT SCHOOLS STUDIED WHO EXCEED THE STANDARD THORNDIKE-McCALL NORMS FOR THE SEVERAL GRADES AND WHO EXCEED THE NORMS FOR THE SEVERAL GRADES IN TEN MISCELLANEOUS CITIES

At the End of Grade	*III*	*IV*	*V*	*VI*	*VII*	*VIII*	*IX*	*X*	*XI*	*XII*
Thorndike-McCall Mean T-Score Norms for the Several Grades	37.3	41.8	48.0	53.7	58.3	60.9	62.1	63.6	65.4	68.1
Mean T-Score for 8 California High Schools	——	——	——	——	——	——	——	——	——	65.7
Percentages of 12 H Pupils from 8 California High Schools Exceeding the Above Norms for the Several Grades	99.9	99.7	98.2	93.5	82.8	72.3	64.2	55.2	44.9	35.4
Mean T-Score Norms for the Several Grades from 10 Miscellaneous Cities	32.8	40.9	46.3	51.7	58.0	59.8	60.7	62.5	64.3	67.0
Percentages of 12 H Pupils from 8 California High Schools Exceeding the Mean T-Score for the Several Grades of 10 Miscellaneous Cities	100.0	99.7	99.2	95.5	84.0	78.1	71.0	62.3	50.5	38.0

The table should be read as follows: At the end of Grade III, the Thorndike-McCall mean T-score norm is 37.3 and 99.9 per cent of the California 12 H pupils considered surpass this grade norm. The mean T-score at the end of the third grade in 10 Miscellaneous Cities is 32.8 and 100 per cent of the California 12 H pupils considered surpass this mean T-score. The mean T-score for the California 12 H pupils considered is 65.7. Each grade shown in the above table should be interpreted in the same manner.

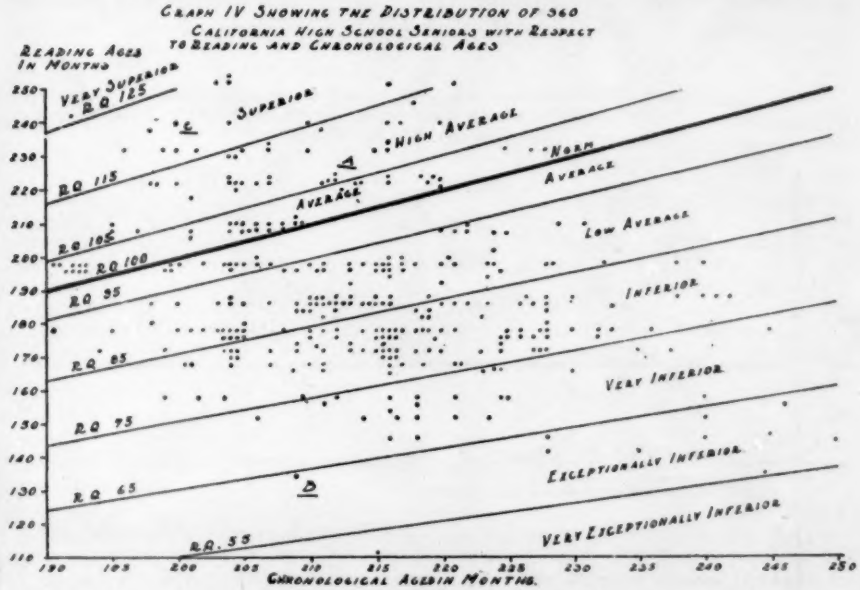
The foregoing table shows that only 35.4 per cent of the California seniors considered surpass the norm, as established by Thorndike and McCall, for their grade, and that 44.9 per cent surpass the low eleventh grade norm, which is approximately the mean grade achievement for the California seniors considered, as shown in the table.

It also appears that the mean T-scores for the several grades from the ten Miscellaneous Cities are somewhat lower than the norms established by Thorndike and McCall. From this one may expect a greater percentage of the California seniors considered to surpass the mean scores for the several grades as attained in ten Miscellaneous Cities, than in the case of the groups used in establishing the standard norms. The above statement is shown to be true since our data show that 38.0 per cent of the California 12 H pupils considered excel the eleventh grade mean T-score for ten Miscellaneous Cities. This reveals the fact that the group of California seniors considered is one grade (year) lower in achievement in reading comprehension than the seniors measured in the ten Miscellaneous Cities.

Levels of Reading Comprehension Expressed in Terms of Reading Age and Chronological Age. It is frequently desirable to be able to express a degree of accomplishment in any subject in terms of the age (in years) for which the particular degree of accomplishment is normal. Thus if a boy of any age, say 10 years, makes a reading score equal to that which is the norm for 13 year olds, he is said to have a reading age of 13 years. Through the use of this technique it will be possible for us

to present graphically for each chronological age group the several reading ages, thereby showing acceleration or retardation in reading achievement with reference to chronological ages.

Below is given a chart which shows the normal achievement for each age, the extremes which bound the several levels of reading comprehension in terms of age, and the placement with reference to age and achievement for each of the 360 12 H pupils of the composite group.

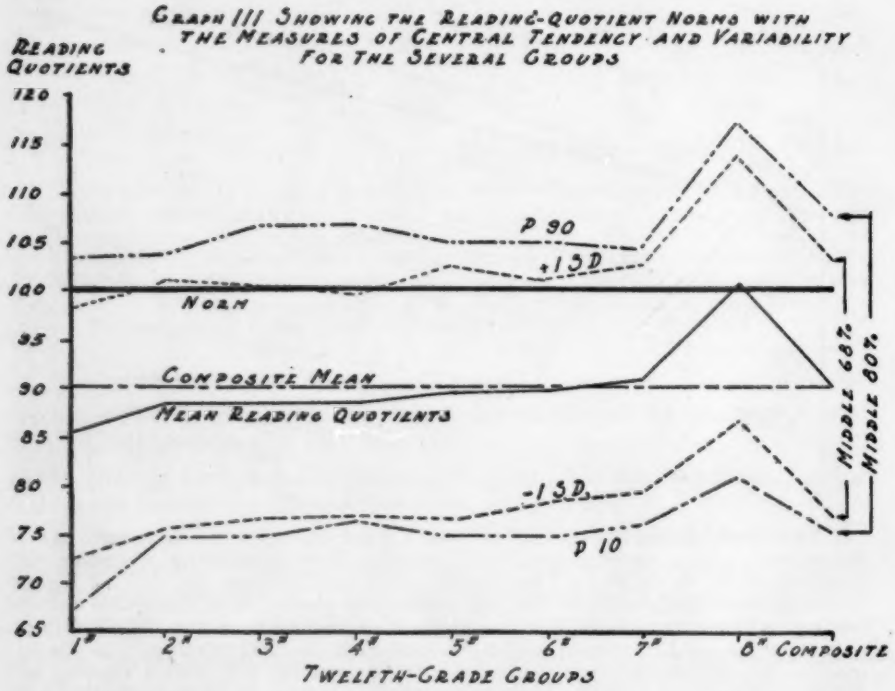


The chart should be used as follows: Pupil A has a chronological age of 215 months and a reading age of 231 months, thereby showing a reading age acceleration of 16 months. The reading quotient (Reading age divided by the Chronological age, or 231 ÷ 215) is 107.4, thus placing him above the normal reading achievement line and in the average achievement group. Pupil B with a reading age of 135 months and a chronological age 209 months is in the exceptionally inferior reading achievement group, and pupil C with a reading age of 240 months and a chronological age of 200 months is in the very superior group. The placement for each of the 360 pupils should be interpreted in the same manner.

It is almost obvious that reading ability is a function of several variables, one of which is grade in school, another is chronological age, another foreign language handicaps, and the like. Here grade in school is made constant, and foreign language handicaps should be largely minimized through the fact that membership in the 12 H secondary school group implies several years of enrollment and study in secondary schools. Yet we note from the chart that within limits, pupils of each degree of attainment are found on each chronological age level from 16 to 22 years inclusive. Again, the chart shows a clustering of placements not about the norm but rather about a line in the low average (R. Q. 90) group. A large majority of the records are below the norm R. Q. 100.

Finally, the chart shows that pupils of the same grade and even of the same chronological age within the 12 H group vary so widely in reading comprehension that the case of each pupil must be diagnosed separately and individual treatment given: remedial work if necessary, or special and enriched offerings in proportion to the several reading abilities.

Distribution of Reading Quotients. The measures of central tendency and variability of reading quotients for the several groups and composite group of high school seniors are shown in the following graph.



From the above graph it is evident that when reading accomplishment is referred to the norms for the several chronological age groups there is a wide spread between the mean norms for the poorest and the best schools. While six of the schools have approximately equal mean reading quotients, one school is noticeably lower and one very much higher than the norm for the total group. Only one school shows a mean reading quotient norm higher than the norm set by the makers of the Thorndike-McCall test.

The graph shows the wide spread in reading quotients for the midde 68 and the middle 80 per cents of each school and of the total group. The facts here mentioned emphasize the wide variabilities pointed out in the discussion of the central tendency and variability of the accomplishment norms (T-scores) which do not take into account the chronological ages of the students.

Vocabulary Achievement for the Composite Group

Distribution of Vocabulary Achievement. The following table shows for the several group intervals, the frequency and percentage of frequency for each of the five percentile score levels of vocabulary achievement. Measurements of central tendency and variability have been computed for the scores as grouped on five point score levels and are here given:

TABLE IV—SHOWING THE DISTRIBUTION OF PERCENTILE SCORES IN VOCABULARY ACHIEVEMENT OF 360 CALIFORNIA 12 H PUPILS

Percentile Score Levels	*Frequency*	*Per Cent on Each Level*	*Measures*	
20 to 24.9	2	0.5	N	360
25 to 29.9	3	0.6	Mode	62.5
30 to 34.9	7	1.9	Range (actual)	21—96
35 to 39.9	13	3.6		
40 to 44.9	13	3.6	Median (P50)	63.0
45 to 49.9	28	7.8		
50 to 54.9	35	9.7	P10—P90	39.2—82.8
55 to 59.9	48	13.6		
60 to 64.9	50	13.8		
65 to 69.9	47	13.0	P25—P75	53.3—73.3
70 to 74.9	36	10.0	Mean	63.1
75 to 79.9	27	7.7		
80 to 84.9	25	6.9	S. D.	14.8
85 to 89.9	16	4.4		
90 to 94.9	8	2.2		
95 to 99.9	2	0.5		

The table should be read as follows: On the score level containing the percentile scores between 20 and 24.9, the scores of 2 pupils are found, whch is 0.5 per cent of the scores of the Composite group. The data presented for each of the group intervals should be interpreted in the same manner.

In interpreting the data presented in Table IV, it should be noted that while the median score in Vocabulary Achievement for the group of 12 H pupils is 63.0, the norm found by Inglis for 12 H pupils is 58.0. From this fact it appears that the median percentile score for this group of 12 H pupils is well above the norm for their grade.

The total range, 21-96 inclusive, when contrasted with the norms for the several grades as established by Inglis, shows a spread of achievement in this 12 H group from a point somewhat below the norm for 9 H grade pupils to a point above the norm for college graduates. Again, the spread of the middle 80 per cent as indicated by the P10-P90 (39.2-82.8) range extends from a point slightly below the tenth grade norm to a point only slightly below the norm for college graduates. Also the spread of the middle 50 per cent, as indicated by the P25-P75 (53.3-73.3) range, extends from the norm of eleventh grade pupils to a point well beyond the norm for college freshmen.

Table V further interprets the foregoing data in that it shows the percentages of the group exceeding the standard norms for each of the several grades and classifications.

TABLE V—SHOWING THE PERCENTAGES OF 12 H PUPILS OF CALIFORNIA HIGH SCHOOLS EXCEEDING THE NORMS FOR THE SEVERAL GRADES

Norms Set for the End of Grade:	*IX*	*X*	*XI*	*XII*	*College Freshmen*	*College Graduates*
Inglis Median Percentile—Correct Norms for the Several Grades	30	42	52	58	70	86
Percentages of 12 H Composite Group Pupils Exceeding the Above Norms for the Several Grades	98.7	91.7	77.8	63.8	31.4	6.4

The table should be read as follows: At the close of Grade 9, the median percentile norm, as determined by Inglis is 30.0; and in comparing the Composite Group with this norm, it is found that 98.7 per cent exceed the median percentile-score norm for this grade. Each of the several grade norms should be contrasted in the same manner.

In the foregoing table it appears that 63.8 per cent of this group of 12 H pupils exceed their grade norm, leaving 36.2 per cent, or 130 pupils out of a total of 360, below their grade standard in vocabulary achievement, instead of 180, who would have been so placed if the California norm had just equaled the standard norm set for the test.

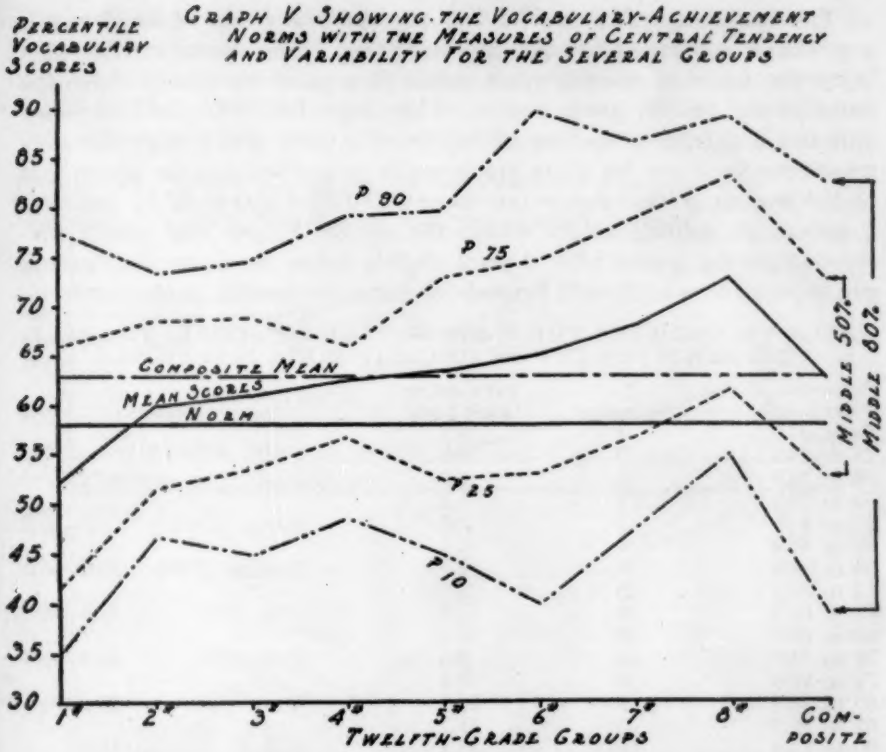
The mean amount of retardation for the portion of the group below the norm (36.2 per cent) is 2½ grades (years). This places their vocabulary achievement equal to that of 10 L pupils. The mean amount of acceleration for the portion of the group above the norm (63.8 per cent) is three years, placing their mean achievement slightly below that for college graduates.

Comparison of Median Scores. On the following page is a graph showing the median score in Vocabulary Achievement for each of the schools considered and for the Composite group and the standard-score percentile norm for the twelfth grade. The graph also shows limits of the middle 50 per cent and of the middle 80 per cent for each group.

From this graph a comparison of the median score of each school can be made with the median score of each other school and with the Composite median score and with the standard norm. Also a comparison of the variability is possible for each school with each other school and with the Composite group.

From Graph V it appears that the median scores for seven of the eight schools considered are above the standard norm; and the median scores for five of the eight schools considered are equal to or above the Composite median score. The median score of one school is 5.5 points below the standard norm, showing only 40 per cent exceeding the standard norm, which is the least amount of any group while one school shows 83 per cent exceeding the standard norm, the greatest percentage exceeding the norm.

The difference in median scores between the school with the highest median and the school with the lowest median is 20 points, which is a difference in achievement greater than that shown between 10 H and 12 H pupils, or more than two grades (years). This is more than one-half the range of achievement shown within the middle 50 per cent of the Composite group.



The graph should be read as follows: The line, ————, shows the standard score norm, which is 58.0. (See Inglis Vocabulary Test.) The line, — — — —, shows the Composite group median score, which is 63.0. The lines, - - — - - —, P10 and P90, show the limits of the middle 80 per cent of the Vocabulary Scores, and the lines, – – – – –, P25 and P75, show the limits of the middle 50 per cent of these scores. The broken line, — — — —, shows the median vocabulary achievement for each of the several groups considered. One school has a median vocabulary score of 63.0, which is 5 points above the standard norm and equal to the Composite median score. The middle 50 per cent of this group fall between the score limits of 52.5 and 73. The data for each school should be interpreted in the same manner.

Spelling Achievement for the Composite Group

Distribution of Spelling Ability. The following table shows for the several group intervals, the frequency and percentage of frequency for each of the several score levels of spelling achievement. Measures of central tendency and variability computed for the scores as grouped on five point score levels are also given.

In interpreting the data presented in Table VI it should be noted that while the mean score for this group of 12 H pupils is 75.2 the norm for 12 H pupils is 72.1. From this fact it appears that the mean score for the composite group is somewhat above the standard twelfth grade norm, thereby showing a mean spelling achievement greater than that of the normal group used to establish the grade standard.

The total range, 23.7 to 97.5, indicates for the group of 12 H pupils a spread of spelling ability for the total group from a point considerably below the norm of seventh grade pupils to a point noticeably above the norm of the twelfth grade pupils. The range P10-P90 (52.5 to 92.2) indicates a spread of spelling ability from a point which approximately represents the norm for ninth grade pupils to a point also far above that of the twelfth grade. Again the range P25-P75 (66.0 to 87.5) indicates a spread of spelling ability within the middle 50 per cent which corresponds to the spread from a point slightly below the norm for eleventh grade pupils to a point well beyond the norm for twelfth grade pupils.

TABLE VI—SHOWING THE DISTRIBUTION OF SCORES IN SPELLING ACHIEVEMENT OF 417 CALIFORNIA 12 H PUPILS

Percentile Score Levels	*Frequency*	*Per Cent on Each Level*	*Measures*	
20 to 24.9	1	0.2	N	417
25 to 29.9	3	0.7		
30 to 34.9	5	1.2	Mode	82.5
35 to 39.9	5	1.2		
40 to 44.9	11	2.6	Range (actual)	23.7—97.5
45 to 49.9	9	2.1		
50 to 54.9	14	3.3	Median (P50)	79.6
55 to 59.9	25	6.0		
60 to 64.9	24	5.8	P10—P90	52.5—92.2
65 to 69.9	40	9.6		
70 to 74.9	36	8.6	P25—P75	66.0—87.5
75 to 79.9	39	9.4		
80 to 84.9	68	16.5	Mean	75.2
85 to 89.9	63	15.1		
90 to 94.9	63	15.1	S. D.	16.0
95 to 99.9	11	2.6		

The table should be read as follows: On the score level containing the scores between 20 to 24.9, the score of one pupil is found, which is 0.2 per cent of the scores of the Composite group. The data presented for each of the score levels should be interpreted in the same manner.

Table VII further interprets the foregoing data in that it shows the percentages of this group exceeding the norm for the several grades.

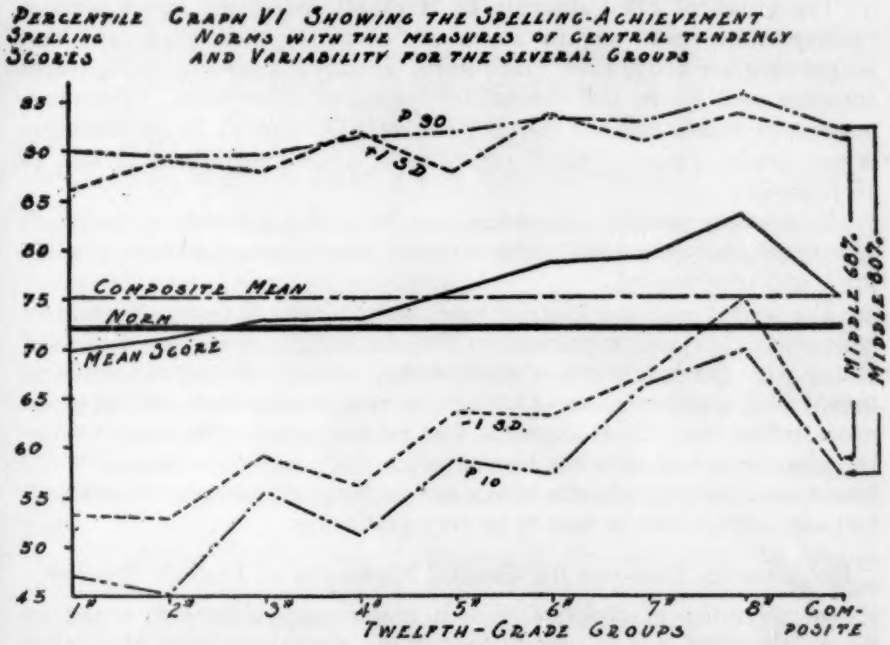
TABLE VII—SHOWING THE PERCENTAGES OF 12 H CALIFORNIA PUPILS EXCEEDING THE NORMS FOR THE SEVERAL GRADES

At the Middle of Grade	*VII*	*VIII*	*IX*	*X*	*XI*	*XII*
Seven S Spelling Scale — Correct Norms for the Several Groups	34.7	45.0	53.9	61.5	67.0	72.1
Percentages of 12 H California Pupils Exceeding the Norms for the Several Grades	98.0	94.0	89.0	81.0	73.0	64.0

The table should be read as follows: At the mid-year point of Grade VII, the standard norm is 34.7, and 98 per cent of the Composite group exced the norm for this grade. Each of the several grades should be interpreted in the same manner.

In the foregoing table it appears that 64.0 per cent of the Composite group of 12 H pupils exceed the norm for their grade, leaving 36.0 per cent below the norm. The above reveals a spelling achievement situation which is well above normal. Further analysis shows, however, that the mean amount of retardation for the portion of the group below the norm, 36 per cent, is two grades (years).

Comparison of Mean Scores. On this page is a graph comparing the mean score of each school with the mean score of each other school considered and with the Composite mean, and with the standard norm for 12 H pupils. Also, the graph shows a comparison of the variability of each school with each other school and with the Composite group.



The graph should be read as follows: The line, ———, shows the standard mean-score norm, which is 72.1. The line, — — —, shows the Composite group mean-score, which is 72.7. The lines, - - — - - —, P10 and P90, show the lower and upper limits respectively of the spelling achievements of the middle 80 per cent of the several groups and of the Composite group of high school seniors, while the lines – – – –, + 1 S. D. and — 1 S. D., show the upper and lower limits respectively of the middle 68 per cent of the group. The line, ———, shows the mean spelling achievement for each of the several schools considered.

One school has a mean spelling score of 84.0 which is 11.9 points above the standard norm and 8.8 points above the composite mean score. The middle 68 per cent of this school group fall between the score limits of 93.4 and 74.4 showing a range of 19.0 points which is approximately the difference between the norms for the ninth and twelfth grades. The data for each school should be interpreted in the same manner.

From Graph VI it appears that the mean scores for six of the eight schools considered are above the standard norm and that the mean scores for four schools are above the composite mean score.

The schools above the norm exceed it by a range of 0.8 point to 9.4 points, while these below the norm are from 0.8 point to 4.6 points lower. The mean score for the school with the highest mean exceeds by 14 points the mean score of the school with the lowest mean score, showing

a difference in mean spelling achievement between the highest and lowest schools considered of five grades (years).

The difference in variability between the school with the greatest range for the middle 68 per cent and the school with the least range is 8.7 points, or slightly more than the score range for one grade.

The group of 417 California 12 H pupils considered shows a mean spelling achievement slightly above the norm for their grade and that 64 per cent are above their grade norm, revealing a spelling achievement situation well above the normal for pupils of this grade. The mean amount of retardation for the 36 per cent (150 pupils) below the norm is two grades (years), which places their achievement equal to that of 10 L pupils.

Each of the schools, except one, has 58 to 86.6 per cent of the pupils considered above the grade norm. In this school remedial work in spelling is probably needed.

The school with the highest mean score shows a mean achievement in spelling approximately equal to that for college graduates, while the school with the lowest mean score shows a mean achievement equal to that of 11 L pupils, showing a four grade mean acceleration and one grade mean retardation. This shows a five grade (year) achievement range between the school with the highest mean score and the school with the lowest mean score. On the whole the spelling achievement situation as here considered may be said to be very gratifying.

Relationship Between the Several Measures of English Studied

Interpretation of Relationship. It is our purpose here to report on the relationships in achievement among the several elements of English studied in the foregoing presentation, and to interpret the meaning of the relationships found. The word used in educational research for such relationship as may exist between different elements is "Correlation".

Thus, correlation is a method for determining the correspondence between two series of scores or measures for the *same* people. As an example; suppose the pupil who receives the highest score in reading comprehension also secures the highest score in vocabulary achievement, and the pupil who secures the second highest score in reading comprehension also secures the second highest score in vocabulary achievement, and so on through the list of pupils considered. It could then be said that a perfect or the highest possible correlation existed between achievement in reading comprehension and achievement in vocabulary. Such a correlation or relationship is indicated by +1.00 or +100. But on the other hand, suppose the pupil securing the highest score in reading comprehension receives the lowest score in vocabulary achievement and the pupil securing the second highest score in reading comprehension secures next to the lowest score in vocabulary achievement and so on through the list of pupils considered. Then it could be said that the least possible correlation existed, which is termed a negative correlation and is indicated by —1.0 or —100. All possible degrees of correlation may exist between

+1.0 and —1.0. In determining the relationship every pupil securing a score in one test must also secure a score in the other test used. This is termed the "pairing of scores". The numerical index showing the degree of relationship between two series of scores is called the coefficient of correlation. The interpretation of the several degrees of relationship between 0 and +1.0 or —1.0 are as follows:

0 to ± .20 shows a negligible correlation,
±.20 to ± .40 shows a low correlation,
±.40 to ± .60 shows a medium correlation,
±.60 to ± .80 shows a high correlation,
±.80 to ±1.00 shows a very high correlation.

Keeping these indications of relationship in mind, we will now interpret the correlations that were found to exist in achievement between the several elements heretofore considered.

Correlation of Reading Comprehension and Vocabulary Achievement. The coefficient of correlation found between reading comprehension achievement and vocabulary achievement was +0.65, with a probable error of 0.03 showing a high and reliable degree of relationship between success in reading comprehension and success in vocabulary achievement. From this it may be said that the better pupils know the meaning of words the better are they able to secure the meaning from the printed page.

The printed English page is different in structure from the Roman or Greek page and permits of different procedure in the recognition process. Then little was written or read, today the adult and the child alike must read extensively. A better recognition process is demanded by the extensive content which must be read.

In the minds of many teachers and pupils still there remains "the confusing assumption that in teaching articulation, the phonic properties of words, and accurate word pronouncing, they are teaching reading".[4] They fail to recognize that these processes, though of value, are not synonymous with reading which is fundamentally the process of gathering thought from the printed page.

The misplaced emphasis was pointed out almost a century ago by Horace Mann, 1838, then Secretary of the State Board of Education in Massachusetts, in the following excerpt:

> "I have devoted especial pains to learn with some degree of numerical accuracy how far reading, in our schools, is an exercise of the mind in thinking and feeling and how far it is a barren action of the organs of speech upon the atmosphere. . . . The result is that more than eleven-twelfths of all the children in reading classes in our schools do not understand the meaning of the words they read they do not master the sense of the reading lesson, and that the ideas and feelings intended by the author to be conveyed to, and excited in, the reader's mind, still rest in the author's intention. . . . It would hardly seem that the combined efforts of all persons engaged could have accomplished more in defeating the true objects of reading."[4]

[4] O'Brien, *Silent Reading*, page 23.

After studying exhaustively errors of children in reading Thorndike concludes:

> "In school practice it appears likely that exercises in silent reading to find the answers to given questions, or to give a summary of the matter read, or to list the question which it answers should in a large measure replace oral reading. The vice of the poor reader is to say words to himself without actively making judgments conceiving what they reveal."[5]

Correlation Between Reading Comprehension Achievement and Spelling Achievement. The coefficient of correlation found between reading comprehension achievement and spelling achievement was +0.40, with a probable error of 0.03, showing a low but significant and reliable degree of relationship between success in the correct spelling of words and success in securing the meaning from the printed page. From the above it appears that a knowledge of the correct spelling of words has less influence on ability to secure the meaning of a paragraph than does a knowledge of the meaning of words as is shown by the coefficients of correlation, being +0.40 in the first case and +0.65 in the second case.

It does not seem materially to alter reading achievement to have letters misplaced or left out entirely in reading material, that is, the pupil pays more attention to completing the concept printed rather than the selection and placement of individual letters in each word.

Vocabulary Achievement and Spelling Achievement. The coefficient of correlation found between vocabulary achievement and spelling achievement was +0.88,[6] with a probable error of 0.01, showing a very high and reliable correlation between achievement in understanding the meaning of a word and achievement in the correct spelling of a word.

The above study shows that the better knowledge a pupil has of the meaning of words the easier it will be for him to spell them correctly. The above data reveal a possibility of improving spelling achievement through training in the obtaining of a knowledge of meaning of words, which also makes for better reading comprehension achievement.

Summary. In the Composite groups of California 12 H pupils considered in the several elements studied, it is found that a high correlation exists between a knowledge of the meaning of words and an ability to secure the meaning from printed material. Also, a knowledge of the meaning of a word makes for correct spelling of the word, and the ability to achieve correctness in spelling has little influence in securing the meaning from the printed page.

Résumé

Data Used and Methods of Procedure. The achievements of 12 H California pupils in the elements of reading comprehension, vocabulary, and spelling have been investigated in this study. The materials used were some 1137 tests, 360 reading comprehension tests, 360 vocabulary tests, and 417 spelling tests, provided by the California State Board of

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[5] Thorndike, E. L., *Reading as Reasoning*, J. E. P., Vol. 8: 323-32.
[6] Thorndike, E. L., *Reading as Reasoning*, J. E. P., Vol. 8: 323-32.

Education for a selected list of the 12 H pupils in nine schools in the State. The tests were given under the immediate supervision of Mr. A. C. Olney, Commissioner of Secondary Schools in California.

In the study mean and median achievements were ascertained for each school and for a composite of all the schools; these measures were compared with the standard norms for the grade and contrasted with each other. Percentages of pupils surpassing the standard norms were also obtained, and variabilities within groups and among the several groups were determined. Finally, the relationship between the several elements considered was determined and an interpretation given.

Findings of the Study and Suggestions. Since sizable samplings of pupils were utilized and a fairly representative group of 12 H pupils was examined, the findings of this study give tentative answers to the following questions:

1. What achievements in reading comprehension do California high school seniors attain?
2. What are the achievements of California high school seniors in their command of English vocabulary?
3. How well do California high school seniors spell?
4. What relationships exist in the achievements of California high school seniors in the several phases of English measured?
5. How do the schools compare in mean achievement and in spread of achievement?
6. Should remedial work have been undertaken in any of the phases of English measured in any of the several schools considered?

The foregoing questions are answered for each of the phases of English measured so far as the data warrant.

Reading Comprehension. In this element of English, the study shows that the mean score of one school exceeds the standard norm, and in seven of the schools considered, the mean scores for 12 H pupils are below the norm for their grade. Further, the study indicates that the mean retardation in seven schools varies from two to five grades (years). Of the entire group of pupils considered, only 34 per cent exceed the standard T-score norm for their grade; the remainder of the group (66 per cent) vary in retardation from one to nine years, the mean retardation being four years. For the composite group, the mean retardation was two years, while the acceleration for the 34 per cent above the norm was from one month to two and one-third years.

The above findings show an "Inferior" achievement in reading comprehension in all except one school which indicates that there is need for remedial work in reading comprehension in our California secondary schools.

Vocabulary Achievement. In this element of English the data show that seven of the eight schools considered as indicated by median scores, are above the standard norm. The other school shows a mean achievement equal to that of 11 L pupils; while the Composite group median shows an achievement well above the norm for this grade, practically a

full year. In only one school is remedial work in the English vocabulary suggested.

Spelling Achievement. In this element of English, the data show that the median scores of the pupils in five of the eight schools considered are above the standard norm for their grade, varying from slightly above to well above the norm. The median score for one of the three schools below the norm is just slightly below normal, while the other two are approximately one grade retarded as shown by mean scores.

While one school shows 52 per cent to be below the norm, in no school does remedial work in spelling show itself to be especially necessary, as all of the other schools show from 58 to 86.6 per cent of the pupils tested to be above the norm for their grade.

The composite group shows a mean score well above the norm and shows 64 per cent of the pupils in the group to surpass the grade standard.

From the above it appears that the California 12 H pupils considered as a group surpass the group of pupils used by Hudelson in establishing the norm in spelling achievement.

Relationship Between Phases of English. The data reveal a high correlation between knowledge of the meaning of words and an ability to secure the meaning from the printed page, a very high correlation between a knowledge of the meaning of words and an ability to spell words correctly, and a low correlation between an ability to spell words correctly and the ability to secure the correct meaning from the printed page.

Suggestions. Tests in the several phases of English achievement might well be given to all pupils entering the high school, thus diagnosing the several achievements possessed, and thereby revealing the several abilities and disabilities in time to give the necessary remedial treatment.

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THE ENGLISH OF HIGH SCHOOL STUDENTS*

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SINCE English is the common medium through which higher education is achieved in the United States, it is natural that this subject should receive special attention from institutions with large and heterogeneous enrollments. Consequently it is not surprising that placement examinations have been adopted, in one form or another, by many such institutions for the purpose of determining the needs of entrants and of supplying corrective instruction when necessary. The results of such an examination in the University of California are of special interest to California teachers of English.

Examination in Subject A. The University of California was one of the first institutions of higher education to adopt the principle of the placement examination, it having employed such an examination in English, in some form, for some thirty years. This examination is now officially known as the "Examination in Subject A", and is designed to test the ability of entrants to set forth their ideas "in idiomatic, effective English, without offensive errors in spelling, punctuation, grammar, sentence, or paragraph structure". Those who pass the examination are permitted to elect such courses in English as they are prepared to carry with profit, but those who fail are required to take a corrective course in English composition before they enter other courses in English or receive their junior certificates. A careful study of the papers of those entrants who have failed in this examination at various times during the last two years reveals certain typical errors, suggests some fundamental causes of weakness in English, and indicates the way toward improvement.

Types of Errors. This study indicates that entrants who fail to satisfy the standard set in English are prone to make certain types of errors in punctuation, diction, sentence structure, spelling, and grammar. In counting the actual number of typical errors displayed in these examinations, the following errors in punctuation were considered: failure to set off parenthetical and independent elements, illogical punctuation, and failure to separate words or groups of words in a series. In diction, the use of the wrong word, redundancy, and the omission of necessary words were counted. Only three types of errors in sentence structure were numerous enough to receive serious consideration: two sentences written as one, the use of incomplete constructions, and constructions which were so illogical as to be meaningless. Failure to indicate the possessive case was counted as an error in spelling. The following errors in grammar were also

*A paper read before the California Association of English Teachers, October 30, 1925.

counted as typical: failure in agreement between subject and verb or between pronoun and antecedent, indefinite reference, and failure to use correct grammatical forms. It is obvious, I think, that none of the errors included in this list is debatable so far as current usage is concerned, that none is justifiable as a personal idiosyncrasy, and that each is more or less fundamental in the writing of effective English.

The results of this tabulation of errors, based on actual count, are as follows:

Kind of Error	Total Errors Per Paper	Percentage of Total Errors
Punctuation	14.6	29.5
Diction	9.5	19.2
Sentence structure	9.4	19.0
Spelling	8.8	17.8
Grammar	7.2	14.5

Inasmuch as the examination calls for a paper of approximately five hundred words, this tabulation shows that the failing papers contained an average of 49.5 errors each, or about one error for every ten words written. And this tabulation includes neither errors in paragraphing nor errors in organization.

But let us look at these failing papers from another point of view. As each paper is read and graded, the items on which it has failed are indicated, without regard to the actual number of errors in each item. This is perhaps more just than the pedantic counting of errors, for some mistakes are much more serious than others; consequently the paper is passed or failed on the latter basis. A tabulation of the items on which papers failed gives the following results:

Error	Percentage of Papers Failed on This Error
Sentence structure	25.8
Grammar	17.5
Spelling	16.5
Punctuation	16.5
Diction	13.4
Organization	10.3

This tabulation reveals the fact that the most fundamental errors are those in sentence structure, grammar, spelling, and punctuation, the latter item an integral part of sentence structure. But diction and organization are not negligible items.

Training in English Deficient. When we consider the fact that these papers were written by high school graduates who had been recommended for entrance to the University, it becomes obvious that students who are, at least in some cases, hopelessly deficient in the use of their mother tongue are being graduated from our high schools. These students enter business, professional careers, and universities ignorant of the theory and technique of the English language as a medium of thought expression. In many cases they testify that they have had little practice in writing

accurately during their high school careers and that they have been taught neither to read intelligently nor to organize and express their thoughts logically; and their performance verifies their testimony. Yet these are fundamental items in education, either elementary or advanced. Nor are the teachers always at fault in these matters. The teaching load is frequently so heavy that it is impossible for the instructor to give the amount of time to supervised reading and writing necessary to secure the desired results. Students, too, frequently devote so much of their time to other activities that they perforce neglect the fundamentals of education.

Satisfying results in these items can be secured only when the student devotes enough thought and time to them to enable him to form correct habits of thought and expression.

Improvement Noted. The situation, however, is far from discouraging. That the ability of high school graduates to write fairly accurate and expressive English is improving, at least in California, is indicated by the results of the examinations in Subject A (English Composition) during the last five years; and I suspect that what is true in California is also true in other states. The standard required for passing the Subject A examination has not materially changed since 1921; yet the percentage of failures has steadily decreased, as the following figures show:

	1921	1922	1923	1924	August, 1925
Number of entrants	2475	2522	2325	3990	1682
Number of entrants	1515	1227	953	1392	648
Percentage of failures	61.2	48.6	41.0	34.9	38.0

Three Factors Contribute to Improvement. A part of this improvement, apparently, is attributable to three factors working within the schools: the improvement in the preparation of the teaching personnel, the reduction of the teaching load, and the increased interest in better methods of instruction. But a part of it is attributable to extrascholastic influence. Business and professional men in America are taking more interest and demanding higher standards in the ability of their employees and associates to use English efficiently (if not gracefully), and this interest is reflected in the work of their sons and daughters on the high schools. As this influence increases, and if high school students are encouraged to read and write good English, a corresponding increase in the efficient study and use of English may be anticipated.

Where Responsibility Rests. The greatest influence in the improvement of the English of the present and future generation of high school students, however, must remain the elementary teacher and high school teacher. I include the elementary teacher because the student must begin to form correct language habits when he begins his education, and I include the high school teacher because his is largely the task of continuing and fixing these habits and of cultivating the enjoyment of reading while the student is still in the formative period of his life. And the prospect is encouraging. Fortunately we are getting away from the idea that grammar is a list of rules to be memorized and the equally fallacious

idea that all grammar should be abolished in the teaching of English. We are learning more and more that all English is an essential unity and that it must be studied as such and taught as such and used as such. High school students are being introduced to literature which is both worthy and interesting, and they are reading it intelligently instead of drowsing over some book about literature. Furthermore, writing is less frequently an isolated, dreary task to be performed and is ever more frequently an opportunity for the student to organize and express his own opinions concerning contemporary problems and events, try his hand at original composition, or investigate and report on situations and subjects analagous to those which demand composition in the affairs of men. With the progress of these conceptions of the function of the study of English we may anticipate increased literacy and even excellence in the effective use of our language. We may even expect students to leave high school with the ability both to enjoy literature and to use the English language effectively.

THE EDUCATED MAN

That man, I think, has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or of art; to hate all vileness, and to respect others as himself.—Thomas Huxley.

AGREEMENT AS TO PURPOSES OF COMMERCIAL EDUCATION

EARL W. BARNHART

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The illuminating report of Mr. Barnhart on Commercial Education in California, contained in the Report of the Committee of Fifteen, created deep interest in California and elsewhere and provoked wholesome discussion. In this number of* THE QUARTERLY *we are indebted to Mr. Barnhart for a further discussion of methods involved in arriving at an understanding of the objectives of commercial education. One of the problems to be studied by a committee, soon to be announced by the Society, will be Business Education in the Secondary Schools of California.*—EDITOR'S NOTE.

S A *result* of the survey of commercial education in the high schools of California made as part of the work of the *Committee of Fifteen* in 1923, I concluded that in California, as elsewhere in the United States, "there is no agreement as to purpose, no knowledge of what is needed, no method of testing the efficiency of the work done, and no leadership or guidance for improving that part of the secondary school program which reaches practically half of the pupils and all of the employers of office and store help."

Fundamentally, an agreement as to the educational purpose of a high school commercial course means that all parties interested have agreed upon the purpose or outcome of the instruction. The parties interested in the outcomes in the instruction given in a high school commercial course are:

1. The public which sends its children to the high school to be trained for employment as beginners in office and store positions;
2. The employers in the community who take as beginners in their offices and stores those trained in the high school, especially in the commercial department;
3. The school officials who must select the most effective educational ways and means for serving the public and meeting the expectations of employers.

While many school officials may not be accustomed to thinking of their commercial courses as being public agencies established for giving the training needed by young citizens as beginners in the office and store positions which are open to these young people in the community, no agreement as to the purpose of the commercial courses can be claimed until both school officials and parents are in accord on this fundamental purpose of the high school commercial courses. When pupils, after graduating from or dropping out of a high school commercial course, are given

*Published 1924, see page 271.

preferential employment by discriminating employers who demand the highest standards of efficiency from their office employees as stenographers, office clerks, machine operators, or salesperson, then and then only can an agreement as to the purpose of the commercial course be claimed to have been reached. Obviously when graduates are not employed in the kind of positions for which they think they have been trained, or when the training received is of but little value in the positions which they get, and when school administrators and teachers think of their commercial courses in terms of general mental discipline, culture, college entrance credits, or high school graduation units instead of occupational training, there is no agreement as to purpose.

The expectations of the employers of beginners in office and store positions must be taken into account before any agreement as to educational purpose of the high school commercial courses can be claimed by any group of schoolmen.

A complete agreement as to the purpose of the commercial courses in the high school on the part of employers of beginners as office and store workers would include an understanding, and approval, of

1. the particular kinds of office and store positions for which the schools give preliminary training;
2. the particular information, habits, skills, and attitudes required for satisfactory service as beginners, and for rapid promotion, in each of the positions for which training is given;
3. the factors, especially human, which so often operate to prevent the public schools from producing satisfactorily trained beginners.

In other words, no agreement with employers as to the purpose of the commercial subjects can be claimed by school men until they know

1. what positions the employers in the community most frequently fill with beginners;
2. what information, habits, skills, attitudes are required for satisfactory service in each of these positions;
3. what are the most frequent lines of promotion leading from each position, and what information, habits, skills, and attitudes are required to win promotion to these positions as well as to give satisfactory service after promotion;
4. what educational materials and methods are the most effective for giving the desired training.

So long as most employers find fault, whether reasonably or unreasonably, with the training received by the majority of beginners they employ and so long as employers do not employ high-school-trained workers in significant numbers in the kind of positions high school teachers have led their pupils to expect, there is abundant evidence of a lack of agreement between the employers and the school as to the educational purpose of the commercial courses. So long, too, as beginners in large numbers have to acquire in the costly school of hard knocks the information, skills and habits necessary for a satisfactory performance of the duties of their

jobs along with the sociably undesirable attitudes and reactions which are so often the by-products of experience—acquired training, there is an obvious lack of agreement between the outcome of school training and the demands of the jobs in which the beginners are employed in offices and stores. In this connection should be mentioned also the emphatic demand from employers for certain outcomes of the high school commercial courses in the form of desirable character traits, such as accuracy, neatness, politeness, honesty, dependability, which the high school teachers have never made more than a verbal pretense of giving and for which they have never attempted to evolve the educational devices for developing in their pupils.

Finally, no agreement as to the educational purpose of the high school commercial course can be claimed unless all in the school system have come to a decision as to

1. what office and store positions in the community are most frequently filled by the school's trainees, whether graduates or drop outs;
2. which of these positions the school can give training for;
3. the most effective teaching materials, program and methods, for giving the training.

Naturally when the responsible officials in the school system have reached a decision as to the purpose of the commercial subjects, as conscientious public servants, they will do everything in their power to give the most effective training possible, and so will provide the needed equipment, elastic schedule, and sympathetic support needed.

It is quite apparent to all schoolmen that there can be no measuring of the efficiency of the instruction unless a definite purpose has been established as the goal. An agreement to teach a little more arithmetic, or penmanship, or as much bookkeeping, shorthand, or typewriting as is possible, results in general aimless ineffectiveness, the very condition a supervisor of commercial education is expected to eliminate and the committee method of curriculum making is planned to end. Certainly the success of the school's output, whether drop-outs or graduates, after they have found employment in the particular kind of work for which they elected to take training, is the only convincing measure of the efficiency of the instruction.

The method generally followed in preparing commercial courses of study undoubtedly has prevented any discussion of the problems fundamental to reaching an agreement as to purpose. Courses of study prepared by assigning to each of a series of independent committees a subject to outline, means that no agreement as to purpose other than to teach that subject, is necessarily involved.

Agreement as to purpose would require that courses of study outline by specific occupations the various kinds of informations, habits, skills, attitudes, and emotional reactions needed for the successful performance of the duties of each office and store occupation for which the schools

were prepared to give training. A sequence of studies would be outlined for those in each occupation with varying amounts of arithmetic, English, penmanship, typewriting, office work, shorthand, machine operating, according to the needs of those employed in the occupations. For example, stenographers must be experts in the technicalities of written English, (spelling, hyphenization, syllabification, punctuation, capitalization, etc.) to a degree that bookkeepers, salespersons, machine operators or general clerks need not have. Hence stenographers need instruction in English of a peculiar kind which no general course in English or business English can give. Again, calculating machine operators and general office clerks must have a high degree of skill stenographers do not need. Hence no uniform course in arithmetic, penmanship, English, typewriting, bookkeeping, office practice can meet the needs of all pupils enrolled in the commercial department; and until the needs of the pupils have been met there can be no valid claim to agreement as to purpose. In other words, any commercial course of study set up in terms of subjects, of which all is or is not to be taken, indicates that those who planned the course thought only of teaching subjects, not of training young citizens for future employment in offices and stores; thought only of justifying what they have been doing for years, not of giving the boys and girls in their charge the training these trusting youth expected to get as an aid to increased earning power and which the employers looked to the high school commercial departments to give.

There are few, very few specific bits of information not learned in the grammar school which are required in every business occupation. The demands of most positions in a given business upon analysis will be found to be quite different from those in another business. Take stenography, for instance. The technical vocabulary of one dictator, say an architect, will be altogether different from that of another dictator in a different business, say a banker or broker. Vocabulary studies have shown that there are some thousand or so words quite common to most forms of communication but that beyond that point the vocabularies of each person, class, and business begin to differ. Studies in arithmetic have revealed much the same condition, the elements common to all life activities being quite few.

To sum up the whole situation: Any course of study for commercial subjects on a subject basis shows that the primary purpose of the commercial department as viewed by parents and employers in the community is not being sought. Hence, those responsible for such a course are not in agreement with the public they are paid to serve.

SAN FRANCISCO COURSE IN CURRICULUM BUILDING FOR SECONDARY SCHOOLS

By permission, this number of THE QUARTERLY *presents the outlines of three lectures of general interest as given at the outset of a course on curriculum building, by Dr. William M. Proctor, Professor of Education, Stanford University. This course is being given by Dr. Proctor, under the auspices of the Extension Division of the University of California, to teachers of secondary schools in San Francisco.*—EDITOR'S NOTE.

LECTURE I

Statement of Educational Aims as a Background for Curriculum Building

I. ***The statement of aim essential***

(a) The mass of material from which selection might be made is so great that aim must be stated as basis for selection.

If teaching of religion were the aim, selection would be made with that aim in view.

If training for social efficiency were the aim, material selected would be designed to promote that aim.

(b) Subject matter selected must not only take account of facts and information, knowledge and skills, but must take account of the use to be made of these.

II. ***Relation of Aim and Curriculum***

Curriculum makers in the past have been careful to state aim, but there has been very little logical connection between aim stated and curriculum recommended.

(a) *Plato:* Aim—to develop the perfect guardian of the state.
Curriculum—gymnastics for the body and music for the mind.

(b) *Comenius:* Aim—learning, virtue, piety.
Curriculum—reading, writing, ciphering, measuring and weighing, singing, psalms and hymns, catechism, Bible, moral rules, economics and politics, physics and geography, arts and handicrafts.

(c) *Locke:* Aim—to train the mind, *i. e.,* make man a reasonable being.
Curriculum—mathematics, and selected subjects designed to drill the powers of the mind.

(d) *Spencer:* Aim—complete living.
Curriculum—derived from five life activities: 1. self-preservation; 2. the earning of a living; 3. the duties of parenthood; 4. the activities of citizenship; 5. occupations for leisure.

(e) *Dewey:* Aim—social efficiency.
Curriculum—to build up such activities as are necessary to train children in co-operative helpful living. The method, learning by doing.

III. ***Typical Secondary Curriculums since 1635 (in this country)***

(a) *The Latin Grammar School*
Latin and Greek, 1635 to 1745.
Arithmetic, 1745.
English, 1835.

(b) *The Academy*

English, 1750.	Logic.	Natural Philosophy. By 1818.
Mathematics.	Surveying.	Political Philosophy.
Geography.	Navigation.	Modern and U. S. History.
Ancient History.	Bookkeeping.	Modern Languages.

(c) *The Public High School*

English Composition and Grammar.
Declamation.
Ancient and Modern History.
Logic.
Mathematics: Algebra, Geometry, Plane Trigonometry.
Navigation.
Surveying.
Natural Philosophy.
Astronomy.
Moral Philosophy.
Modern Languages, after 1875, also,
Manual Training.
Domestic Science and Art.
Freehand and Mechanical Drawing.
Technical and Industrial subjects.

IV. ***Strong tendency to over-crowd the curriculum***

(a) Four years were added to school life between 1800 and 1900. Average age of Harvard freshmen in 1900 was between fifteen and sixteen. In 1920 only 7 per cent were under sixteen years of age. In 1800 pupils entered secondary school at ten or eleven; in 1920, at fourteen or fifteen.

(b) Constant re-organization is necessary to keep the high school in touch with developments of the age which it is to serve.

(c) Prior to 1900, faculty psychology and the discipline theory of John Locke dominated curriculum thinking. Since 1900 the influence of John Dewey has been on the increase.

LECTURE II

Different Ways in Which Present Day Curriculum Builders Approach Their Task

I. *Bonser*: One of the first to apply the principles of job analysis to the problems of curriculum making. Speaking of the elementary curriculum he says: "Its content is made up of those activities in which every one must participate with a like degree of knowledge and skill, and with like attitudes and appreciations, in order that there may be a unified, efficient and stable social life."

II. *Snedden*: The objectives of education will be determined by the needs of adult life, and are of four classes—physical, vocational, civic, and cultural. Each of these major objectives should be broken up into specific objectives involving the necessary knowledges, interests, habits, and powers necessary for the attainment of the larger objectives.

Courses for those designed to be the experts, the explorers, the

creative workers and thinkers designated Alpha and pursued intensively.

Courses designed for training in appreciation or intelligent use of products or service, designated Beta, and developed with different content and taught by different method.

III. *Bobbitt*: Carries activity analysis to extreme limit. He conceives scientific curriculum making as the finding of scholastic shortcomings of children and men. "The first step", he says, "is to analyze the broad range of human experience into major fields. The second step is to take these major fields, one after the other, and analyze them into their specific activities. He suggests ten such major fields:

1. Language activities; social inter-communication.
2. Health activities.
3. Citizenship activities.
4. General social activities—mingling with others.
5. Spare-time activities, recreations, etc.
6. Keeping one's self mentally fit.
7. Religious activities.
8. Parental activities, children, home life.
9. Unspecified, non-vocational, practical activities.
10. The labors of one's calling.

IV. *Charters*: Charters continues the activity analysis plan of curriculum making, but makes significant contributions. He holds that three things must be done in curriculum building: (1) Determine the ideals of socially efficient individuals; (2) Find the fundamental physical and mental activities carried on by the people of the United States, and (3) By a process of laborious analysis discover what important specific activities shall be taught and what ideals shall control in their performance. Not only are we concerned to discover what things people do, but we need to consider also what better things they might do.

The activities and ideals thus discovered should then be arranged in the order of their importance for children.

Contrast Charters' statement above with that of Bobbitt when he says: "Education is primarily for adult life, not for child life. Its fundamental responsibility is to prepare for the fifty years of adulthood, not for the twenty years of childhood and youth."

V. *Rugg*: Sets up the principles of procedure for a committee on curriculum reconstruction, as follows:

1. The committee should be a deliberate body of subject experts and educational specialists, who should first state (a) the aims and outcomes of instruction, and (b) the criteria for inclusion, grading and teaching of the materials selected.

2. The committee should organize investigations of social and psychological needs.
3. The committee should be a clearing-house and forum to stimulate discussion of its proposed programs.
4. The committee should be a continuing or standing body, studying the application of their recommendations in the school system.

Scientific procedure includes: 1. The systematic inventory of current practices and theories; 2. The critical construction of hypotheses on the basis of this inventory; and 3. The use of objective analysis and experiment.

LECTURE III

How Relative Importance of Different Curriculum Materials May Be Determined

I. *By an understanding of the raw material of secondary education—the adolescent boy and girl.*

(a) Physical traits. (c) Social traits.
(b) Mental traits. (d) Individual difference in these traits.

Beginning with the monumental work of G. Stanley Hall on adolescence, the past two decades have witnessed greater progress in the measurement and understanding of adolescent characteristics than was witnessed in any two centuries preceding.

There is a vast amount of experimental data available, but very slight use has been made of it as yet in the building of curriculums more adaptable to the known aspects of adolescent development.

The time has arrived when practical use must be made of the facts discovered, or much of the value of recent contributions to knowledge about adolescents will have been lost.

II. *By a better understanding of the social situation, of which the product of our secondary schools is to become a part.*

(a) We of this generation have been taking part in the age of transition:
   1. Industrially, from rural agricultural to urban-industrial conditions.
   2. Socially, from a homogeneous to a heterogeneous population.
   3. Nationally, from an isolated, self-sufficient nation to a leading world power with extensive insular possessions.

(b) The boys and girls now in high schools will inherit a much more complicated social, political, and industrial situation than that into which we entered when our high school days were over.

A curriculum suited to their needs must take account of the knowledge, attitudes, ideals, and skills along these lines as they now are or are likely to be for the next ten to twenty years.

To expect to train the rising generation of adolescents on the curriculum adapted to conditions from 1870 to 1900, is about as effective as it would be to fill the tank of a Ford with wheat-straw and expect it to run.

III. ***By a square look at present day and probable future needs, obligations and opportunities, and a formulation of our secondary educational objectives in the light of that survey.***

1. Objectives as formulated by:
   (a) *Inglis*: Social-civic, economic-vocational, individualistic-avocational—three.
   (b) *Snedden*: Physical, vocational, civic, and cultural—four.
   (c) *Commission on reorganization,* in *Cardinal Principles*: Health, command of fundamentals, worthy home-membership, vocation, civic education, worthy use of leisure, and ethical character—seven.
   (d) *Bobbitt*: Language activities, health activities, general social activities, citizenship activities, spare-time activities, keeping one's self mentally fit, religious activities, activities of home life, unspecified practical activities, vocational activities—ten.
2. Whatever the final list of aims selected as valid in a given social and industrial situation, such aims must be stated in general terms and utilized as standards against which to measure all subjects proposed for admission to a working program of study.

   Ideally, then, the program of studies will be made up of only such subjects as have been selected with a view to:

   1. The mental, physical and social nature of the adolescent;
   2. The nature of the social situation present and prospective, and
   3. The main fields of activity in which those who live in such a situation must engage both as children and adults.

   Practically, we will consider what is being done in other situations similar to ours, what the psychologists, sociologists, and the hoi polloi have to say about it, what text-books are available, the time at our disposal, the availability of trained teachers, and financial resources, before we suggest the elimination of certain subjects and the substitution of certain others.

INTERNATIONAL EDUCATION AS PART OF THE SCHOOL SYSTEM

ALICE WILSON
Girls High School, San Francisco

AT THE World Conference on Education held in San Francisco in July, 1923, the following resolution was adopted:

"That this Conference endorse the development of international school correspondence and the appointment of an educational representative in each country to co-operate with the schools in the promotion and execution of similar programs."

A great deal of work to give people a truer knowledge of other countries has been done by various institutions all over the world. Correspondence amongst school children exists, directed either by organizations outside of the school system, or by language and history classes inside the school.

The students the world over know little about each other, and what they do learn in the classroom does not give them the personal touch, so important to create understanding; and understanding leads to sympathy, and sympathy might eventually lead to peace. If all these efforts were organized into one great system of international education directed by the school, it might be an active power towards a better understanding amongst nations. The following is an outline of a plan to direct and unify these efforts under school management:

I. To organize in each high school in every country a group of juniors and seniors with a background of history, and preferably with a modern language, who show a strong interest in foreign countries and in modern international questions.

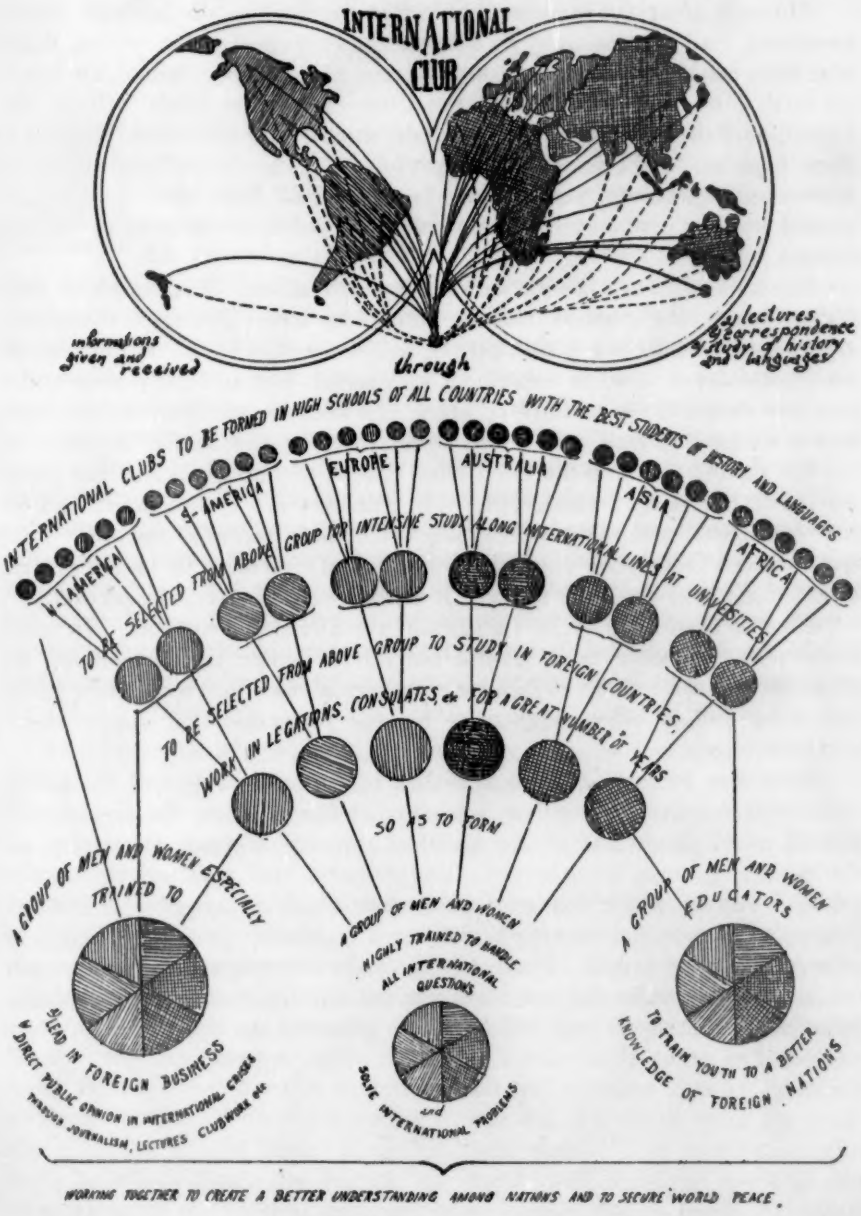
(a) To establish correspondence among these various groups—correspondence touching any possible subject: art, music, history, economics, science, according to the special inclination of individual students or groups of students.

(b) To make an intensive study of those countries through reading, lectures, and club discussions.

II. To select those students who have shown special ability in grasping and assimilating international ideas, and encourage them—helping them through scholarships, if necessary—to continue in this field of study in college or university.

III. To urge each government to employ the best of these students in its department of foreign affairs, in the field best suited to their special abilities, in order that they might gain a practical knowledge of the international policies of their own countries.

IV. To send abroad these young men and women, in connection with embassies and consulates, to study in universities, to live and work among the people in order to understand their needs and ideals, their ways and customs. Here they would meet on common ground a group of men and women from all countries with whom they would work toward a common aim—mutual understanding. These men and women should form the diplomatic corps of every nation.


INTERNATIONAL CLUB
informations given and received
through
by lectures, correspondence, study of history and languages
INTERNATIONAL CLUBS TO BE FORMED IN HIGH SCHOOLS OF ALL COUNTRIES WITH THE BEST STUDENTS OF HISTORY AND LANGUAGES
N. AMERICA
S. AMERICA
EUROPE
AUSTRALIA
ASIA
AFRICA
TO BE SELECTED FROM ABOVE GROUP FOR INTENSIVE STUDY ALONG INTERNATIONAL LINES AT UNIVERSITIES
TO BE SELECTED FROM ABOVE GROUP TO STUDY IN FOREIGN COUNTRIES.
WORK IN LEGATIONS, CONSULATES, etc FOR A GREAT NUMBER OF YEARS
SO AS TO FORM
A GROUP OF MEN AND WOMEN ESPECIALLY TRAINED TO
A GROUP OF MEN AND WOMEN HIGHLY TRAINED TO HANDLE ALL INTERNATIONAL QUESTIONS
A GROUP OF MEN AND WOMEN EDUCATORS
TO LEAD IN FOREIGN BUSINESS
TO DIRECT PUBLIC OPINION IN INTERNATIONAL CRISES
THROUGH JOURNALISM, LECTURES, CLUBWORK etc
SOLVE INTERNATIONAL PROBLEMS
and
TO TRAIN YOUTH TO A BETTER KNOWLEDGE OF FOREIGN NATIONS
WORKING TOGETHER TO CREATE A BETTER UNDERSTANDING AMONG NATIONS AND TO SECURE WORLD PEACE.

The foregoing is an outline of what the school can and should do to create a better understanding among nations.

Through a careful process of selection the best of our students would eventually lead the nation in its international relations. The others, those who have remained interested, should form, after leaving school, an International Club in their city and the three clubs: the High School, the College and the City International Clubs should have some link that binds them together. The business and professional men would gain a better understanding of the people they have to deal with, and they would spread international ideas and enlighten the public in matters of World import.

We live in an age where we cannot stand alone. The telephone and the telegraph, the wireless and the aeroplanes have eliminated distances; any event that affects a nation deeply, has its counter-effect on the nations the World over. And as we cannot as a nation live alone any longer, the least we should do is to learn to know and understand those nations with which we have to deal, which now means every nation in the World.

We started a club in the Girls High School of San Francisco last term. So far it has proved successful. The students are enthusiastic; and so are the parents and many people interested in educational matters. Letters received from other countries show that everywhere the people realize that the school is the place to start, if world peace is ever to be secured.

Several high schools in California are affiliating with us. In each country there should be a central bureau to handle the distribution of addresses, so as to avoid overlapping, to keep a record of what other clubs are doing and to offer suggestions for the formation and improvement of similar clubs.

Since the primary aim of the club is understanding and sympathy with other countries through a better knowledge of them, the high school should avoid discussion of the political side of international events of the day.

The way in which our own pupils and those of other schools have responded, shows that our work is filling a want and opening a large field of service for the future. If any of the readers of this article is interested enough to undertake the establishment of any such club in his or her school, information or help will be gladly given by the writer.

CONFERRING SCHOLASTIC HONORS ON HIGH SCHOOL STUDENTS

KATHLEEN D. LOLY
Pasadena High School

DURING the past twenty-five years almost all phases of secondary education have undergone a careful investigation, and many and varied have been the changes in organization, curriculum and method. Owing to the rapid increase in numbers and the necessary attendant variety in personnel of the present high school student body, constant effort has been made to fit the work to the ability of the pupil in order to avoid failures and to keep the student in school. While this is indeed a worthy ideal and a democratic one, many educators have felt the danger of neglecting real scholarship and. therefore, the danger of neglecting to train educated leaders, surely a necessary part of any democracy. Moreover, the general public and some colleges and universities have been criticising the high schools for low standards of scholarship and over-emphasis of athletics and other activities. To combat this criticism and to find some incentive for better scholarship, many teachers and administrators have been seeking some way of recognizing and honoring ability in intellectual pursuits. A means has been found for conferring scholastic honors on secondary school students through the organization of Honor Scholarship Societies, and it is the purpose of this paper to discuss the history of this movement in the United States.

The Principle of Emulation. History teaches us that emulation, that is, "effort or ambition to equal or excel another in any act or attribute"[1] has shaped the course of all destiny and that it has always been one of the principles used to spur students on to do their best. The Jesuits recognized the fact that every capable boy wanted prestige among his fellow students, and so they made emulation one of the dominant features of their educational system. Like any other practice, this practice can be abused, and the opponents of the Jesuit system of education claim that the followers of Loyola used bad pedagogic tools, such as prizes, decorations, and rewards to stimulate rivalry and ill feeling among the boys. Many historians, however, give the Order credit for honestly endeavoring to emphasize the true value of competition and of using it as an incentive to study instead of the cruel corporal punishments which were the common practice at that time. S. G. Williams says: "The motive (emulation) to which they (the Jesuits) so largely and skillfully appealed for securing good scholarship, although now reprehended in many influential quarters, is still far from extinct, as is tested by our prize systems, our marking systems, and our practice of assigning relative rank in classes."[2]

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[1]Standard dictionary—Funk and Wagnalls.
[2]Williams, S. G., History of Modern Education, page 117.

One only has to examine the social and business world of today to realize that the principle of emulation is still recognized and that all kinds of corporations, lodges, clubs, and other organizations honor the winners with rewards. Little wonder then that in this time of rapid educational development, many administrators and teachers are returning to the application of these ideas in the organization of their schools in order to furnish an incentive for better scholarship.

Competition a Recognized Practice. Modern educators are placing more and more emphasis on the recognition of ability, whether it be in scholastic, athletic, literary, oratorical, musical, or social service achievement. The custom in the grades of awarding stars of gold or silver paper to the child who has made a perfect score in attendance, spelling or arithmetic is common. Honors are often conferred on pupils at public gatherings and every effort is made from the kindergarten up to encourage the pupil to do his best. As the child is promoted into the junior and senior high school, the spirit of competition is more and more organized. The pupils in one class are divided into rival teams for spelling matches; one class will compete against another class in first year algebra; all the class in 9_2 Spanish will compete in a verb contest; all the students of music in the system will enter a memory test, and, lastly, school teams will meet rival teams from other schools. Recently a systematic effort has been made in many secondary schools to take advantage of this love of rivalry among adolescents and, combining it with their desire for clubs, to furnish an organization which has as its purpose the awarding of scholastic honors. The honor scholarship society is the result. This indeed is a progressive movement and worthy of the time and effort necessary to put it into operation, since in this day of autos, movies, and radios there is grave danger of curriculum activities being neglected by the pre-adolescent and adolescent child. During the last decade honor societies have sprung up in many high schools in all parts of the United States. This rapid development of clubs, all with the same purpose of stimulating better scholarship, soon lead to the formation of federations in certain large cities, districts and states, and two national honor societies for secondary schools have come into existence.

Growth of Honor Scholarship Societies. The rapid growth of this movement can be summarized in the following brief survey of the situation. According to Edward Rynearson,[3] of the Fifth Avenue High School, Pittsburgh, the first honor scholarship society for secondary schools was founded in 1900 by Dr. William B. Queen, of the Chicago Normal School, and was called the Phi Beta Sigma society. The idea spread rapidly and in 1906 the Cum Laude society was started as a national organization by Dr. A. W. Harris at Towe School, Port Deposit, Maryland. In 1916 the Pro-Merits Society was formed in Western Massachusetts, and, by 1922, seventy-five high schools had established chapters. In 1917 the Board of Education in Los Angeles established the

[3]School Review, Vol. 30, pages 456-466. "Honor Societies in Secondary Schools."

Ephebian society, an organization of high school graduates elected on the basis of scholarship alone from the highest 10 per cent of the class. The Arista society of New York was organized into a membership of over twenty high school chapters. In 1921 the California Scholarship Federation came into existence with thirty-three charter member schools and today numbers one hundred and fourteen. There has been shown from east to west the need of organization and an effort to find some common basis of awarding scholarship honors to high school pupils.

The Cum Laude Society. The Cum Laude society was started in 1916 under the name of the Alpha Delta Tau fraternity in a group of private schools for boys in Maryland. At first the growth of the society was slow, owing to the confusion which its Greek letter name caused and the fear of complications with the State anti-fraternity laws. As soon as the name was changed to Cum Laude and membership was opened to girls as well as boys, many public schools applied for membership, and today the organization is enjoying a healthy growth. One of the desirable features of this federation of honor societies is that it does not pay any of its officers and gives to the chapter schools and the individual members more than it receives from them. In other words, the two dollar fee for membership does not even cover the cost of the certificate and badge. The object of the Cum Laude society is "the encouragement of high ideals of work in secondary schools."[4] Its methods of electing members is similar to that of the Phi Beta Kappa society in colleges and universities. The conduct of the chapter schools is under the control of the faculty, but nobody below the first fifth of the class in scholarship is eligible to membership and not more than one-tenth may be elected at any time during the year and the remainder at the end. The government of the whole organization rests with a Board of Regents who call a general convention every third year. This organization has passed the experimental stage and, according to the latest information, it now has about forty active chapters with over two thousand student members.

The National Honor Society. Perhaps the most important if not the first national organization of honor scholarship societies in secondary schools is the Torch society, founded by J. G. Masters of Central High School, Omaha. The founder was convinced that in every high school there should be some definite way of recognizing high scholarship combined with character, initiative and service, and he organized such a club in his own school. His motive in starting a national society was a desire to form a strong organization with uniform entrance requirements for membership, and with a uniform federation seal and pin. The plan was discussed at the National Association of Secondary School Principals at Chicago in 1919, and Mr. J. G. Masters was appointed chairman of the committee on "A National Honor Society". The following year at Cleveland a report was submitted and the association favored the plan and the committee was continued. In 1921 the constitution was accepted

[4]Cum Laude Society. J. C. Kirtland. School Review. Vol. 30, pages 171-172.

and the name chosen was "The National Honor Society". In 1922 the council of the society met in Chicago; at this meeting the form of the charter was approved and the price fixed at five dollars. The emblem of the organization is a torch, held high in the arm of a youth, and old gold is the society's color. In 1923 the constitution was revised in its present form.

Principles and Policies of the National Honor Society. A study of the constitution of the National Honor Society ought to be made by those interested in this phase of the topic, but for the general interest of the readers of this paper, a few facts will be noted: The National Honor Society has four objectives, the development of (1) scholarship, (2) leadership, (3) service and (4) character in the students of American secondary schools. By the constitution the details of organization and administration are left to the various chapter schools and each is allowed to formulate its own rules and regulations. This has led to a great variety of methods of selecting members; some require all grades of A or 1 (excellent), some take an average of all previous grades and some have a weighted system.

Lack of Standard Deplored. This lack of common standard is indeed a serious weakness, and efforts are now being made to demand a certain degree of uniformity. Another defect in the organization is the elimination of students below the last half of the junior year (11A Class). Some schools have endeavored to oversome this by organizing a junior honor society with a separate constitution, different rewards, etc., but here again is lack of uniform standards and so lack of strength of organization. Other opponents of this constitution object to so much emphasis being placed on qualities other than scholarship; some educators claiming that membership in a scholarship society should be based on scholarship alone. The National Society says that membership must not exceed 15 per cent of the senior class but that the students can be selected from the upper 25 per cent of the class ranked on scholarship alone. Indeed it is a debatable question whether this is too small an allowance for real scholarship attainment but all will agree that scholarship without leadership, service and character is of little value to the individual or to society.

Uniform Methods Needed. Some uniform method of judging leadership, service and character must be developed before there can be any real justice in the awarding of honors. The National Honor Society is now seeking ways and means of overcoming this lack of uniformity in its chapter schools and the organization is looking for suggestions and information. The weighted system of evaluating credits on the following basis is being advocated: A = 5 points, B = 4, C = 3, etc. and definitions of service, leadership and character traits and attitudes are being suggested for use by the faculty committee or other selective body. It is pointed out that no school is obligated to select the whole 15 per cent of the graduating class and that, after the suggestions of the committee have been submitted to the vote of the whole faculty, it is best to eliminate a few of the lowest in rank so that the standards may be rather too strict than too

lenient. No doubt all these suggestions are a step in the right direction and that as time passes a satisfactory solution of the question of student election to membership on a uniform standard will be found. In the meanwhile many high school principals in all parts of the United States are recognizing the value of a national society and are adding to the prestige of their local scholarship organization by becoming members of the National Honor Society.

California Scholarship Federation. The California Scholarship Federation was organized in this state in 1921. At the State Principals' Convention held that year in San Rafael, Charles F. Seymore, head of the Social Science Department of Long Beach High School, spoke of his plan of organizing a state-wide society modeled on the scholarship societies then in existence in Long Beach, National City, San Luis Obispo and several other cities. The plan met with approval and, June 4 of the same year, a meeting of high school principals or their representatives was held in Los Angeles to discuss the feasibility of organizing a state society with uniform minimum standards of student eligibility. Some schools which already had established scholarship organizations of various kinds and many others interested in the movement sent delegates. A committee of five was appointed to draw up a constitution and the report of this committee was received at an adjourned meeting held in September of the same year. Quick action was desired, so another meeting was called for October 15, and at that time a constitution was adopted and thirty-three schools applied for charter membership. The seal adopted for the federation is now used on the diploma, college transcripts and school records of like members of the organization. A uniform pin was adopted and this emblem is now awarded in all member schools to seniors who have been members for at least two-thirds of their entire high school course, including one semester in the senior year.

A Student Branch Helpful. The constitution of the C. S. F. provides for a student branch of the organization. This was found necessary since the organization and administration of the federation proper, the election of member schools as chapters and of students as members, are in the hands of teachers. Through the Student Branch the pupils are given an opportunity for self-expression, and each year delegates are sent to the annual banquet and convention held during the Christmas holidays. Last year the meeting was held at Pomona College. It was an inspiring sight to see over five hundred student delegates and faculty members representing over one hundred schools assembled together. Where else could one find such a promising group of high school pupils? Every delegate present not only had proved his scholastic ability but also his success as a leader and social favorite, else he would not have been chosen to represent his school at such an important conference.

Advantages of the California Constitution. A comparison of the constitution of the California Scholarship Federation with that of the National Honor Society reveals the fact that many of the undesirable features of the latter society have been eliminated in the C. S. F. organization.

Minimum uniform standards for student eligibility have been worked out and are required of all member schools, but no limit is provided—that is, a chapter may require all grades of "1" for membership if it so desires. The administration of the chapter is left to the school, thus allowing the application of the state constitution to be made to fit local needs. The ten point system, as it is called, has proved the most satisfactory means of testing a student's eligibility to membership and has been adopted by the vast majority of the one hundred and fourteen local chapters.

Affiliation Not Yet Desired. The California Scholarship Federation is not as yet affiliated with either of the national honor societies. The officers of the organization carefully investigated both societies and finally decided that at present it was better to form a strong state organization with common uniform minimum requirements. There is no doubt that as soon as the two national societies can arrive at some standards which will be acceptable to the majority, the California Federation will feel the time has come to join forces with other states. There is no doubt that "In unity there is strength" and it is to be hoped that the time is not far distant when there will be a national honor society in American high schools which will have as much influence and prestige in its field as the Phi Beta Kappa honor fraternity has in the colleges and universities of the United States.

A Study of the Pasadena Honor Society. I shall take the Honor Society of the Pasadena High School as a typical example of an active chapter of the C. S. F. for the reason that the writer has been the faculty advisor of this club since its organization. The Pasadena High School Honor Society has not been in existence four years and has enjoyed a continued growth in memberships. At first many students, especially the boys, looked upon the society with scorn and classed its members as "book-worms" and "grinds". Many boys who were leaders in athletics, debating and other activities failed to apply for membership or were ashamed to appear in public to receive their pin. All this has changed, and today no honor in the school is more coveted than the silver pin "P" or the gold emblem of the C. S. F. The hearty co-operation of the physical education department has been received and many girl and boy athletes have found that it is possible to be captain of school teams and at the same time keep up with their studies and be members of the Honor Society. Year after year the spirit of co-operation has developed until the idea has been accepted by our student body that character, scholarship and fellowship (the C. S. F. ideal of our Honor Society) are to be expected of every student who is endowed with a superior intelligence.

Methods of Securing Membership. At the end of each semester when the final grades are distributed each pupil who believes that he is eligible to membership in the Honor Society obtains an application blank. The form of this card is as follows:

APPLICATION FOR MEMBERSHIP IN HONOR SOCIETY

Name..... (surname first)

Date..... Year in School.....

	Place X
I have a C. S. F. pin	
I expect a C. S. F. pin	
I have a silver pin	
I expect a silver pin	

SCHOLARSHIP				POINTS	TEACHER'S SIGNATURE
Period	Year	Subject	Grade		
I					
II					
III					
IV					
V					
VI					(Gmn teacher must sign also)
No grade below "2" gives one point					Checked by Faculty
95 per cent or above gives merit point					1.
Service points (see other side)					2.
10 Points Required For Membership			TOTAL		3.

When the card has been properly filled out and signed by the applicant's teachers, the pupil files it with the chairman of the faculty committee of the Honor Society. The cards are sorted and classified by student officers and then are checked by three members of the faculty committee. This committee is selected by the principal and consists of the chairman, who holds the position from year to year, and six other members of the faculty representing different departments in the school.

Ten points are required for membership. The methods by which these points can be earned are explained on the reverse side of the application blank.

(Reverse side of Application Blank)

I. Scholarship points are reckoned as follows:
Grade "1" in a unit subject gives.....3 points
Grade "1" in a ½ unit subject gives.....1½ points
Grade "2" in a unit subject gives.....1 point
Grade "2" in a ½ unit subject gives.....½ point

II. Service points (outside activities) are reckoned as follows:
3 to 9 give.....½ point
10 or more give.....1 point

III. Merit points (good citizenship) are reckoned as follows:
95% or above gives.....1 point

NOTE:—1. At least 8 of the 10 points required for membership must be earned in curriculum studies.
2. Failure in any subject debars membership.
3. Grades received for repeated subjects cannot be counted.
4. No Junior High grades are counted in any awards.
5. Previous merit records of less than 90% debars from membership.
6. Seniors who have maintained membership for ⅗ of previous High School course are entitled to wear C. S. F. pin.
7. Graduates are awarded C. S. F. if they have maintained membership for ⅗ of course, one semester of which must be in the Senior Year.
8. Graduates are awarded Silver "P" if they have missed receiving the C. S. F. pin by lacking one semester's membership.

The merit point and service point systems have been very carefully worked out in Pasadena High School and the awarding of these points is in the hands of a faculty committee working with student officers. Complete data of each student's record of merit and service points is on file in the office and is available to the Honor Society committee.

Prestige and Privileges of Members. The Pasadena Honor Society is steadily growing in prestige and its influence is being felt more and more by all members of the student body. The annual events of the organization are looked forward to with great pleasure by those fortunate enough to be members and all the students are interested in what the society is doing. Each semester the club has charge of one assembly and at this time the list of all the members for the semester is read and pins are awarded to new members. This list is also published in the school and local papers.

During the first semester of each year a banquet is held and a program or party follows. During the second semester the members are allowed an all day excursion and many are the envious glances cast upon those fortunate enough to be able to go. Trips have been taken by members to Riverside, Redondo, Hollywood studios, the battleships in San Pedro harbor, and to Catalina Island. The members of the faculty feel that this is a well earned holiday. In February of each year a formal reception is held for the seniors who are C. S. F. members, and their parents. This has proved a successful event, as it brings the Board of Education, superintendent, administrative officers into direct contact with the most promising members of the graduating class. The student body grants the Scholarship Society 4 per cent of all its receipts. This enables the society to hold its social events without collection of any dues from the members. The regular meetings of the society are held once a month during the advisory period. At this time business is transacted and programs are given either by members or by outside talent. The officers of the society have always been leaders in other school activities. Although our Honor Society endeavors not to play any active part in the student body politics, every candidate for office who can, lays claim to membership, either in his nomination speech or in the publicity campaign. This feeling of pride is natural and it has been carefully fostered by striving to make the Scholarship Society a live agency for service to the school.

Scholarship Entitled to Special Recognition. The custom of recognizing scholarship in public secondary schools of the United States is not new. Medals and other forms of prizes have commonly been awarded to the best scholars, and at commencement time the honor of speaking has always been given to those standing highest in scholarship. However, the organization of societies which limit their membership to those who have excelled in intellectual work is new and has aroused some opposition. Those opposed to the idea claim that this organization develops an intellectual aristocracy in the school, since few can ever hope to reach the eligibility requirements; that special privileges are being given to the select few and that artificial barriers are being set up in a democratic high

school. This may be true, but so it is in other phases of school and social life. Nobody has ever objected to the athletes who were able to win their letter and so membership in the Lettermen Club. Surely this an an autocracy of the physically superior just as the Honor Society may be termed an autocracy of the mentally superior. Men are not created equal, and just as we recognize that certain people are endowed with athletic prowess, musical talent, or other special abilities, so we must recognize that some are endowed with general intellectual ability. Honor should be given where honor is due. Educators generally agree that honor scholarship students should not be elected on the basis of grades alone, since the honor student should approach the ideal which the modern high school is trying to produce, a superior intellectual leader who can serve, and at all times is willing to serve, his family, his school, his city, his state and his nation.

The formation of honor societies in public schools is based on the sound principle of emulation. The study of adolescents has revealed the fact that clubs of all kinds with their badges, insignia and varied functions are necessary means to the "long-circuiting" of sex instincts. They have taken a legitimate place as an integral part of high school organization.

The officers of the California Scholarship Federation are: Miss Kathleen D. Loly, President, High School, Pasadena; Secretary-Treasurer, Mr. Charles F. Seymour, High School, Long Beach.

THE PURPOSE OF A MODERN HIGH SCHOOL

JAMES EDWIN ADDICOTT
Principal, Polytechnic High School, San Francisco

OOKING at education from a broad viewpoint, the purpose of institutional education within the walls of the school are identical with the purposes of education within the home. Each aims at the three-fold development of the human being. Wise parents and teachers are planning for the highest form of education in physical, mental and spiritual growth. Any neglect, either in the home or in the school, of any one of these three purposes results in a lower form of individual efficiency.

The modern school differs from that of the school of a few decades ago because of the fact that the home is gradually transferring its responsibilities for the education of the boys and girls to the institution which we call the school.

The home, the school, and the church all have fundamental responsibilities in the education of our boys and girls leading to worthy American citizenship. In terms of the past, the church and the home are both falling short of their full opportunities, and the modern school is being criticized because it does not at the present time carry on to completion all the

functions which the home and the church in the past were supposed to fulfill.

The gradual shifting of all educational responsibilities upon the school has lead many, even the modern advocates of public education, to criticize our schools at times perhaps beyond the warranted facts. Practically every one nowadays has something to say regarding the defects of educational processes as conducted in our public schools. We hear from many sources serious criticisms on what is wrong with the public schools and we seldom hear a champion of public education telling what is right with the public schools. I would like to stress what purposes are right in our high schools.

Before anyone can intelligently criticize the work of our public schools he must have at least some vague knowledge of the culture epoch theory as it applies to the adolescent boy and girl. According to this theory every human being, betwen infancy and old age, has at least the opportunity to pass through all the different stages of human development. This theory does not necessarily commit us to the theories of embryology, nor on the other extreme to the theory that every human being is a god in himself. The theory, however, does necessitate the belief that the world is getting better, not only through the life of its individual members but also through the organization and development of social relationships.

Each human being begins as an animal, gradually developing human intelligence leading on to the higher forms of moral and spiritual life. Anything which tends to retard this gradual control of the physical and mental development by the spiritual nature of man may be termed a hindrance to education, at least in its highest human form and purposes.

The highest purpose of the modern high school, I would say, is the use of the experiences of life in work and play, in home and in school, in such a way as to allow every student to learn his own capabilities in relation to the great work of the world which must be done. Book work and shop work in a high school are merely means to this end—to help the boy to make a more intelligent choice of life work—and if this choice be right, the world's work will be better done and the world will, to that extent, grow better.

It is the business of the modern high school to find, locate, direct, and encourage the talents of the students in such a way that each one may find a life vocation in which he will be happy because his vocation is of some service in the development and onward movement of the world's great purposes. Conclusion—the main purpose of the modern high school is to help the boys and girls to find what their life vocations are to be, and to help them to prepare for that life work, and also to help them to understand that their life work is a matter of social service rather than an individual gain.

STANDARDS OF MEASURING THE EFFECTIVENESS OF VOCATIONAL EDUCATION

NICHOLAS RICCIARDI
Commissioner of Industrial and Vocational Education, California

A STANDARD is a criterion or unit of measurement generally recognized as satisfactory. The effectiveness of vocational education, therefore, should be measured by the standards generally recognized as satisfactory by the persons who receive the product of vocational education.

Interviews with employers and employment managers lead inevitably to the conclusion that the standards which determine the success of any person as a worker and citizen are the standards which require that he be (1) thorough, (2) economical of time and materials, (3) effective even under difficulties, (4) resourceful, (5) dependable, (6) physically fit, (7) vocationally fit, and (8) a loyal citizen.

Defining a Generally Recognized Standard

A person who is thorough is characterized by thoughtful employers and employment managers as one who has a painstaking attitude towards work, completes every task and carefuly observes all details. All this he does within a reasonable length of time.

A person who is economical of time and materials is one who has an attitude of constant and sustained attention towards work and has habits of disregarding accidental distractions.

A person who is effective even under difficulties is one who shows habitual self-possession, has the ability to use effective substitution methods, can devise ways and means of meeting obstacles and overcoming them.

A resourceful person is one who has the ability and disposition to make quickly a satisfactory adjustment to new situations, and can plan work independently.

A dependable person is one who is trustworthy and reliable, and possesses the habits of punctuality and truthfulness.

A physically fit person is one who enjoys good health and has habits which insure the continuance of good health and physical endurance.

A vocationally fit person is one who is pursuing a vocation best suited to his interests and abilities and shows by the character of his work that he has the craft knowledge and craft skill required for success in his vocation.

A loyal citizen is one who takes an active and constructive interest in problems that affect community, state and national welfare, and votes with intelligence and regularity.

These are the chief standards by which the success of the worker and citizen is measured by those who receive the product of vocational edu-

cation. The degree to which the individual measures up to these standards determines the degree of success he achieves. These, therefore, are the standards by which the effectiveness of vocational education should be measured.

Procedure for Organized Guidance

How can we train boys and girls in secondary schools so that they will measure up to the standards enumerated above? The establishment of a procedure for organized guidance in secondary schools will help materially in developing in our young people the qualities that will enable them to measure up to the standards generally recognized as satisfactory in the vocation they expect to enter. By a procedure for organized guidance is meant a system of recording the progress of each student so that the learning process can be most effectively controlled and directed to definite objectives. Such procedure places the emphasis upon individual counselling based upon the individual's interests, and his abilities.

A practicable procedure for organized guidance is based upon a student vocational counselling card which gives the student's history from school to suitable employment. The card is of such character as to be readily intelligible, not only to school people, but to men and women in industry. It is simple and definite; it is the effective means of checking the student at the right time and of making the best possible adjustment; it is the means, also, of obtaining for every high school the following information:

1. The number of students attending high schools for one, two, three, or four years, or until graduation.
2. The number of students dropping out on account of illness, unsatisfactory scholarship, financial pressure, lack of interest, or for any other reason.
3. The number of students transferred to other schools.
4. The number of students entering part-time school.
5. The number of students entering higher institutions of learning after graduation.
6. The number of students placed in employment and followed up.
7. The number of students unaccounted for.

Arrangements have already been made to use the student vocational guidance card in the following places: Los Angeles, San Bernardino, Martinez, Stockton, Sacramento, Auburn, Marysville, Santa Rosa, Sebastopol, and Eureka. The use of the card in these places will make available the individual histories of approximately 15,000 students. These histories will give very concrete information which should enable us to do many things that we now hesitate to do because of the lack of reliable data to guide us.

When we have a program of education which accounts for every student from school to suitable employment, we can then speak sincerely of democracy in education, we can then speak positively of what education must accomplish for *all* young people, we can then answer any challenge with definite facts which will constitute a positive justification of our program of secondary education.

STUDENT VOCATIONAL COUNSELLING CARD

The record card for the forms given below is 8 by 10 inches, with "Instructions to Teachers" and "Follow-Up Record" printed on the reverse side.

Name ..... Birthday..... Age.....

School..... Place..... Year Ending.....

From School..... Place..... Grade.....

I.

Signature..... Date.....

PRE-HIGH SCHOOL RATINGS

Mental .....Rating: A, B, C, D, E..... Score: .....
Health .....Rating: A, B, C, D, E..... Score: .....
Effort .....Rating: A, B, C, D, E..... Score: .....
Accomplishment .....Rating: A, B, C, D, E..... Score: .....
Conduct .....Rating: A, B, C, D, E.....
Pre-Vocational Work .....Rating: A, B, C, D, E.....
Special aptitude and Traits

Note: Block I is to be filled out by the junior high school principal, the counselor or the elementary school principal.

II.

Signature..... Date.....

INTERVIEW

Student's Chief Vocational Interests

1. .....
2. .....
3. .....

Vocation Student Would Like to Pursue.....
Number of Years Student Will Probably Attend High School.....
Remarks

III.

Signature..... Date.....

TRAINING RECOMMENDED BY COUNSELLOR

1. Leading to Professional Occupation.....
2. Leading to Non-Professional Employment in.....
   (a) Trade and Industrial Occupation.....
   (b) Agricultural Occupation.....
   (c) Commercial Occupation .....
   (d) Home-Making.....
3. Parent's Approval: Yes..... No.....

Remarks

IV.

Signature..... Date.....

EDUCATIONAL PROGRESS

1. Effort .....A, B, C, D, E Semester 1st.....2nd..... 3rd.....4th..... 5th.....6th.....7th.....8th.....
2. Vocational Fitness.....A, B, C, D, E Semester 1st.....2nd..... 3rd.....4th..... 5th.....6th.....7th.....8th.....

Remarks

V.

Signature..... Date.....

PLACEMENT AND EMPLOYMENT PROGRESS

1. Place of First Employment.....
2. Kind of Work .....
3. How Successful.....
4. Leisure Time Activities .....

Remarks

Note: A copy of this card must be forwarded to the part-time school when the pupil who leaves the full-time school to enter employment is under eighteen years of age.

(Reverse side of card)

INSTRUCTIONS TO TEACHERS

This Student Counselling Card may be put into effect preferably in the eighth grade or in any grade of the secondary school. Its use does not necessitate any changes in record keeping now in effect.

Block I should be filled out by the elementary school principal or the counselor. When this is not possible, it should be filled out from such records as are available, and a standard mental test given to obtain the pupil's score. When the necessary data is not available, begin with Block II and fill out Block I as soon as the data can be obtained.

Grade indicates the school year in which the student is enrolled when this Card is first made out, as eighth, ninth, tenth, eleventh or twelfth year.

The Signature in each block should be that of the person recording the information.

The Mental Score is the pupil's rating determined by a standard mental test. In recording the score indicate the test used.

The Mental Rating is the counselor's or the principal's estimate of the pupil's power to learn compared with other children of his age, based upon the pupil's record.

The rating in Health is to indicate the pupil's physical fitness. In recording the health score, give name and score of any objective measurements used.

The rating in effort is to indicate the pupil's attempt towards accomplishment. Where measurements are available which express how well a person is achieving what he could achieve as measured by the mental score, record that information as effort score.

The rating in Accomplishment is to indicate the degree of success achieved by the pupil in his work. In recording accomplishment score, give the name and score of standard achievement test used.

The rating in Pre-Vocational Work is to indicate the pupil's achievement in shopwork, in home-making or in agriculture. In recording the score in pre-vocational work give the name and score of any objective measurements used.

The rating in Conduct is to indicate the pupil's personal relationship with his fellow pupils, his influence upon them, his attitude towards his school, his participation in school activities and his personal relationship with his teachers.

The ratings A, B, C, D and E are defined as follows:

A means Superior	1, or 90 to 100 per cent.
B means Good	2, or 80 to 90 per cent.
C means Average	3, or 70 to 80 per cent.
D means Below Average	4, or 60 to 70 per cent.
E means Inferior	5, or below 60 per cent.

The information in Block I is to aid in evaluating the pupil's answers in Block II.

The training program in Block III is based upon information in Blocks I and II.

Vocational Fitness means aptitude either for a professional or a non-professional pursuit. The rating, therefore, in Vocational Fitness in Block IV indicates the degree of success with which the pupil is pursuing the training program for the vocation he plans to enter.

Block IV calls attention to adjustments as needed.

Block V is the placement and follow-up card.

When a student goes to a higher institution of learning after graduation, is transferred to another school, drops out and cannot be accounted for, or leaves for any reason, indicate such information under "Remarks" in the follow-up record, giving specific date.

The follow-up record must account for each student who has left school.

FOLLOW-UP RECORD

Date	Place of Employment	Kind of Work	Compensation	Employer's Rating	Remarks and Signature

Note: The duration of the follow-up record is left to the discretion of the school.

PERSONALITY TRAITS AND THE COLLEGE SUCCESS OF HIGH SCHOOL GRADUATES

W. HARDIN HUGHES
Director of Research and Service, Pasadena City Schools

WHAT type of student do we graduate from our high schools? To whom, in general, do we accord highest academic honors? What kind of graduates do we recommend to college and university? Who succeed as college freshmen?

The type of data most frequently used in attempts to answer such questions is in terms of intelligence scores and school marks. These are, no doubt, valuable for predicting success or failure in college; but they tell only a part of the story. It is the purpose of this study to set forth some findings concerning the relationship of certain personality traits to academic success.

Method of Investigation

The data relative to students' personality traits used in these studies were obtained through an organized plan for the cumulative rating of students in the Pasadena high schools. The method has been described elsewhere.[1] Those familiar with the scale used in this connection will recall that it defines in terms of typical behavior each of twelve important traits; sets forth the technique of rating individuals in accordance with the principle of relativity of degree; and provides for the pooling and the accumulating of ratings so that a composite record is obtained each year based on the judgments of all teachers with whom the student has carried on work.

The Type of Student We Graduate and the Type We Accord Highest Honors

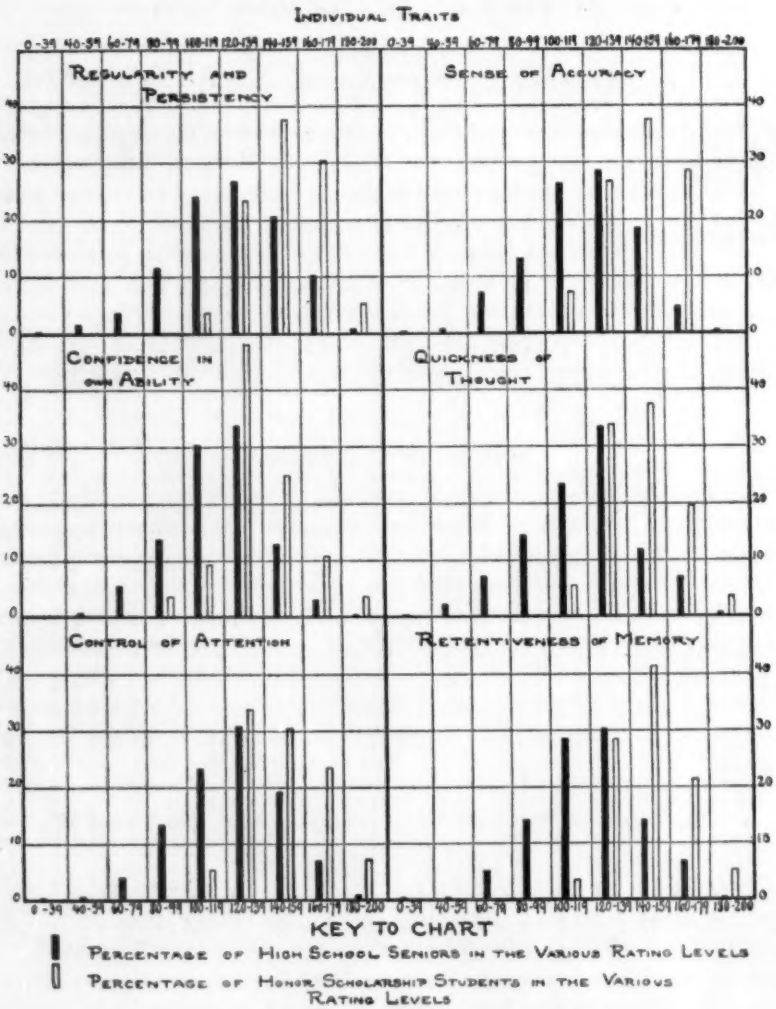
On the basis of such records the accompanying charts have been prepared. Charts I and II show the percentage distribution of the entire senior class of 1923 and its fifty-six "honor scholarship" students. The length of the black bar in each rating level indicates the per cent of the entire class falling in that level, while the length of the white bar indicates the per cent of the fifty-six honor students in that level. It will be noted that the scale for each trait extends from 0 to 200. The charts show in relative fashion the degree to which honor students are superior in the possession of these desirable traits.

It will be noted that in eight of the traits; namely, regularity and persistency, trustworthiness, sense of accuracy, respect for authority, co-

[1]Hughes, W. Hardin, *A Rating Scale for Individual Capacities, Attitudes, and Interests*, Journal of Educational Method, October, 1923.
Ibid, *General Principles and Results of Rating Trait Characteristics*, Journal of Educational Method, June, 1925.

Chart No. I

TRAIT RATINGS OF HIGH SCHOOL SENIORS AND HONOR SCHOLARSHIP STUDENTS ACCORDING TO PERCENTAGE DISTRIBUTION

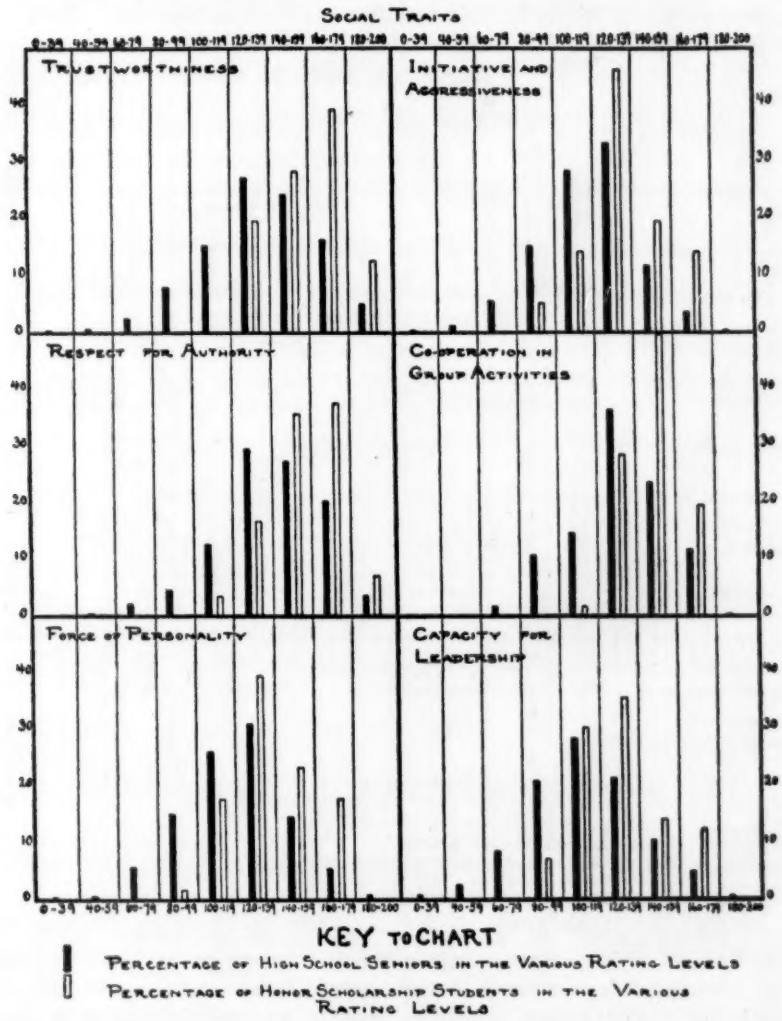

INDIVIDUAL TRAITS
REGULARITY AND PERSISTENCY
SENSE OF ACCURACY
CONFIDENCE IN OWN ABILITY
QUICKNESS OF THOUGHT
CONTROL OF ATTENTION
RETENTIVENESS OF MEMORY
KEY TO CHART
PERCENTAGE OF HIGH SCHOOL SENIORS IN THE VARIOUS RATING LEVELS
PERCENTAGE OF HONOR SCHOLARSHIP STUDENTS IN THE VARIOUS RATING LEVELS

operativeness, quickness of thought, strength and control of attention, and retentiveness of memory, no honor student fell below a rating of 100. In one of these, trustworthiness, no honor student fell below 120. In only four traits; namely, self-confidence, initiative and aggressiveness, force of personality, and leadership, did any honor student receive a rating below the 80 to 99 level. We should have in mind, however, that the average rating for the entire class on each of these traits is approximately 120.

It will be noted also that in the lower rating levels, the percentage distribution of the entire class is relatively high, and in the upper levels,

Chart No. II

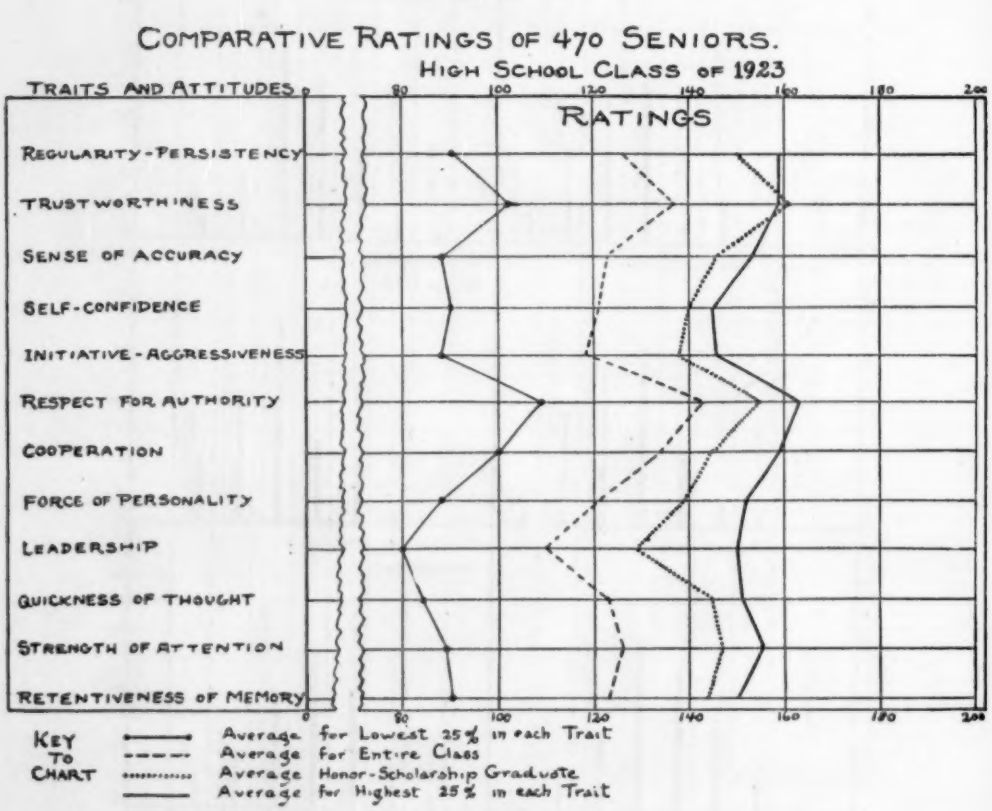
TRAIT RATINGS OF HIGH SCHOOL SENIORS AND HONOR SCHOLARSHIP STUDENTS ACCORDING TO PERCENTAGE DISTRIBUTION.


SOCIAL TRAITS
TRUSTWORTHINESS
INITIATIVE AND AGGRESSIVENESS
RESPECT FOR AUTHORITY
CO-OPERATION IN GROUP ACTIVITIES
FORCE OF PERSONALITY
CAPACITY FOR LEADERSHIP
KEY TO CHART
PERCENTAGE OF HIGH SCHOOL SENIORS IN THE VARIOUS RATING LEVELS
PERCENTAGE OF HONOR SCHOLARSHIP STUDENTS IN THE VARIOUS RATING LEVELS

relatively low, as compared with the percentage distribution of honor students in these levels, respectively. This, of course, is what we should expect to find if "honor students" are really of the honor type.

Chart III shows in graphic form the strong points and the relatively weaker points of honor students. The extent to which the honor student approximates the superior standing of the best twenty-five per cent of students should be noted. For the first six traits and the last three traits in the list, the average rating of honor students very closely approximates the average rating of the best twenty-five per cent of students. The "best

Chart No. III



twenty-five per cent", however, is charted independently for each trait; and its membership, therefore, varies slightly from trait to trait. On this account, the honor group, with its constant membership, is at a disadvantage in the comparison.

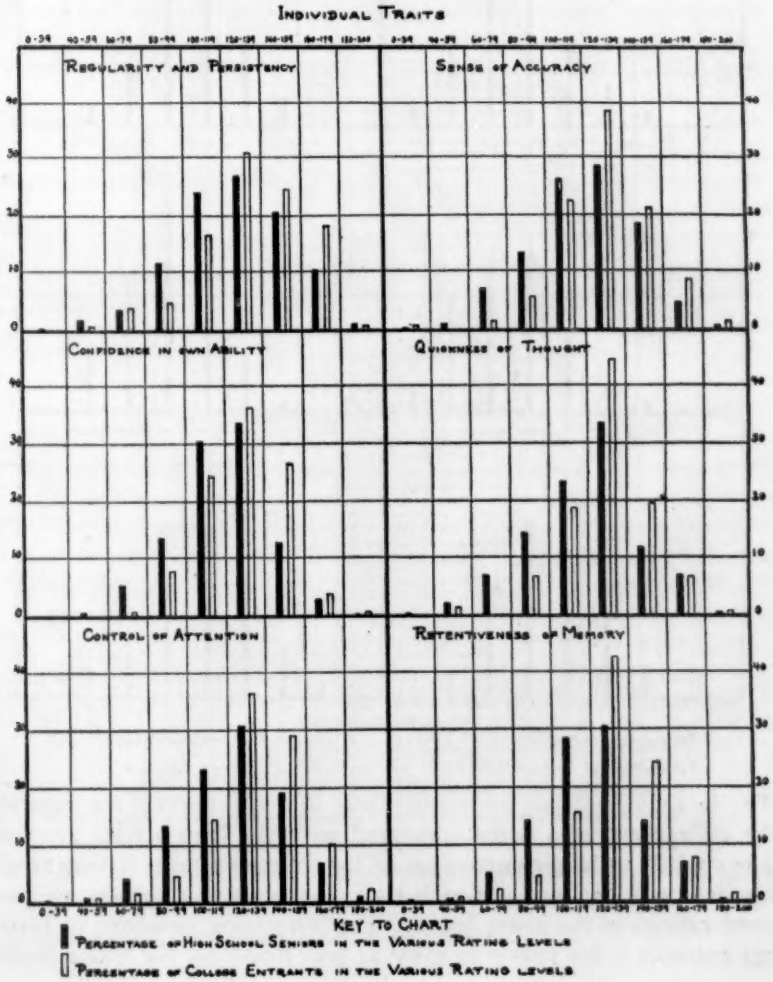
However, the strong points and relatively weaker points in honor students may be seen in the chart. The three traits in which they fall most conspicuously below the "best twenty-five per cent" are co-operativeness, force of personality, and leadership—the last named being the one in which they are relatively weakest. It will be noted that in this very important characteristic, the average honor student is about half way between the average student and the student who represents the average of the "best twenty-five per cent".

The Kind of Graduates We Recommend to College

In a similar manner, we have set forth in Charts IV and V the kind of students who entered college from our 1923 graduating class. The

Chart No. IV

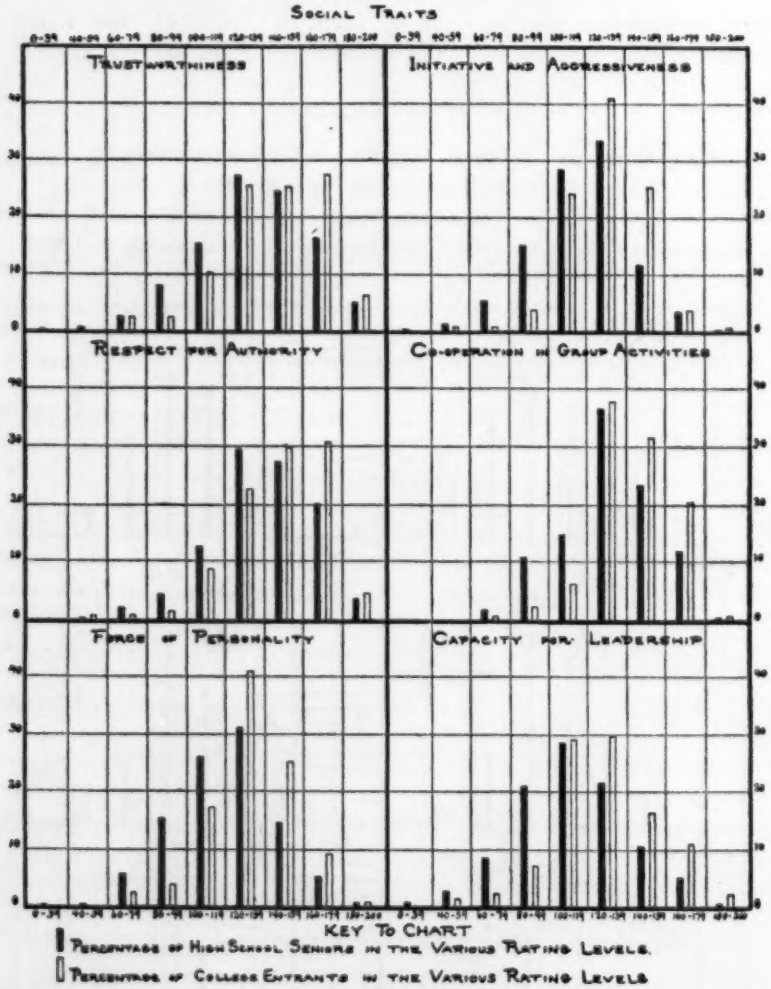
TRAIT RATINGS OF HIGH SCHOOL SENIORS AND COLLEGE ENTRANTS ACCORDING TO PERCENTAGE DISTRIBUTION.


INDIVIDUAL TRAITS
REGULARITY AND PERSISTENCY
SENSE OF ACCURACY
CONFIDENCE IN OWN ABILITY
QUICKNESS OF THOUGHT
CONTROL OF ATTENTION
RETENTIVENESS OF MEMORY
KEY TO CHART
PERCENTAGE OF HIGH SCHOOL SENIORS IN THE VARIOUS RATING LEVELS
PERCENTAGE OF COLLEGE ENTRANTS IN THE VARIOUS RATING LEVELS

black bars, as in Charts I and II, show the percentage distribution of the entire class, while the white bars indicate the percentage distribution of 127 members of this class who entered institutions of higher learning and whose first semester's college records were obtainable at the time this study was begun.

Chart No. V

TRAIT RATINGS OF HIGH SCHOOL SENIORS AND COLLEGE ENTRANTS ACCORDING TO PERCENTAGE DISTRIBUTION.


SOCIAL TRAITS
TRUSTWORTHINESS
INITIATIVE AND AGGRESSIVENESS
RESPECT FOR AUTHORITY
CO-OPERATION IN GROUP ACTIVITIES
FORCE OF PERSONALITY
CAPACITY FOR LEADERSHIP
KEY TO CHART
PERCENTAGE OF HIGH SCHOOL SENIORS IN THE VARIOUS RATING LEVELS.
PERCENTAGE OF COLLEGE ENTRANTS IN THE VARIOUS RATING LEVELS

The fact which stands out prominently in these charts is the superiority of the college entrants when compared with the high school graduating class as a whole; a larger percentage of the college entrants having received ratings in the upper levels in each trait, and a smaller percentage having received ratings in the lower levels. The difference, however, in favor of college entrants is not nearly so great as was found for the honor students.

Also, the range of trait distribution of college entrants is much greater than that of honor students, extending downward into the 80 to 99, the 60 to 79, and event into the 40 to 59 levels. A few college entrants, in fact, had fallen below a rating of 40 in so important a trait as sense of accuracy.

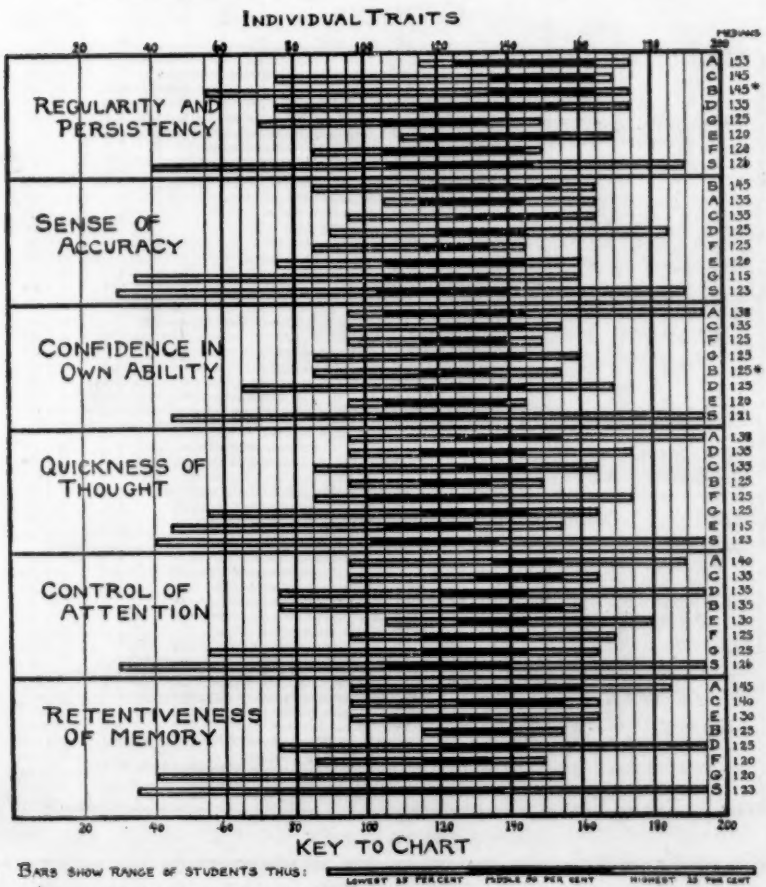
The Type of Graduate Sent to Various Colleges and Universities

Having the trait records of our students, we are able to classify the various colleges and universities according to the type of graduates admitted from our high school. In Charts VI and VII, for example, may be seen the range of ratings on each trait for the graduates whom we have sent to colleges A, B, C, D, E, F, and G, respectively.

It will be noted that in college A for trait, regularity and persistency,

Chart No. VI

HIGH SCHOOL SENIORS AND COLLEGE ENTRANTS ACCORDING TO DISTRIBUTION OF TRAIT RATINGS.

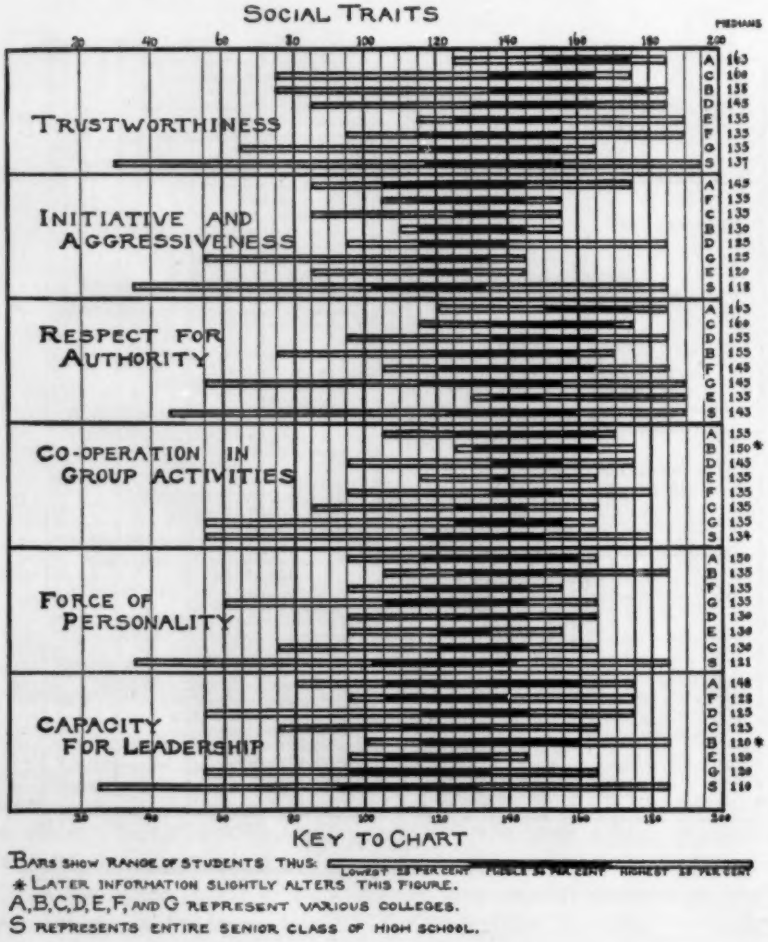

INDIVIDUAL TRAITS
REGULARITY AND PERSISTENCY
SENSE OF ACCURACY
CONFIDENCE IN OWN ABILITY
QUICKNESS OF THOUGHT
CONTROL OF ATTENTION
RETENTIVENESS OF MEMORY
KEY TO CHART
BARS SHOW RANGE OF STUDENTS THUS:
LOWEST 25 PERCENT
MIDDLE 50 PER CENT
HIGHEST 25 PER CENT
* LATER INFORMATION SLIGHTLY ALTERS THIS FIGURE.
A, B, C, D, E, F, AND G REPRESENT VARIOUS COLLEGES.
S REPRESENTS ENTIRE SENIOR CLASS OF HIGH SCHOOL.

the middle fifty per cent of the students entering from our high school had received ratings ranging from 125 to 165. The upper twenty-five per cent of this same group fell between 165 and 175, while the lowest twenty-five per cent ranged from 115 to 125. The medium rating of our graduates in this particular college was 153, which is higher than the median for any other college. When we compare the bar for this college with the bar (S) representing our entire graduating class we see how superior was the group of our graduates admitted to college A.

In the same way, comparisons may be made for each of the other traits. It will be seen that college A maintains first rank in eleven of the twelve traits and takes second place in the remaining one. Almost as consistently, some of the other colleges represented in these charts fall in the lower ranks.

Chart No. VII

HIGH SCHOOL SENIORS AND COLLEGE ENTRANTS ACCORDING TO DISTRIBUTION OF TRAIT RATINGS.



Since colleges and universities rate our high school according to the success or failure of our graduates, it is important for us to know to what extent our graduates in each college are representative. If in college A, for example, our graduates do exceptionally well, our high school receives a high rank. This rank, however, does not necessarily prove the general superiority of our high school product. Neither would a low rank assigned to our high school by college G indicate a general inferiority of our graduates. In fact, college G has admitted a relatively inferior group of our graduates.

Only by ascertaining the type of student attracted by the several colleges and universities are we able to evaluate the ranks given by them to our high school. If in college A, for example, our graduates do inferior work and cause our school to be ranked low in comparison with other schools, we have reason for serious thought in the matter; for if our best compare unfavorably with the average elsewhere, then our average product must, indeed, be poor. The record of achievement for our graduates in college A, however, is superior.

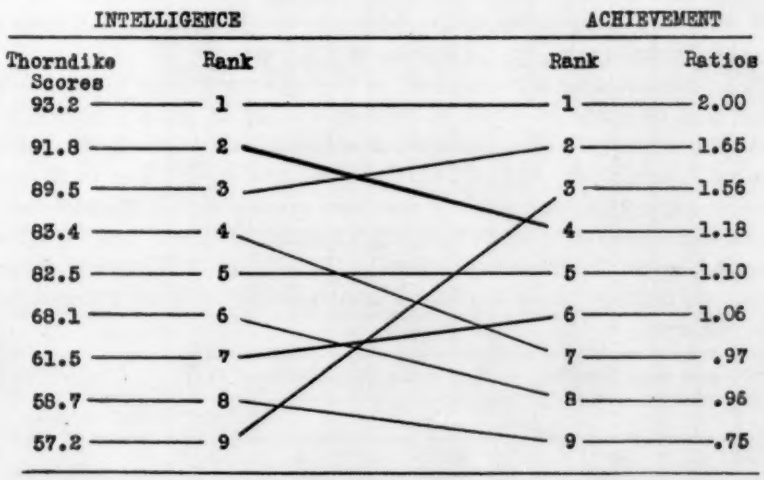
In like manner, we need to consider the comparative type and the relative achievement of our graduates in each of the other colleges.

Who Succeed as College Freshmen?

For lack of space it will be impossible to give many interesting details concerning the relationship of personality traits to academic success. Chart VIII, however, is typical of findings in several colleges and universities to which our high school graduates went. The nine students here represented earned Thorndike intelligence scores as indicated. On

Chart No. VIII

RELATION OF RANK IN INTELLIGENCE SCORES TO RANK IN UNIVERSITY ACHIEVEMENT



the basis of marks received by these students during their first semester the achievement ratios were determined. A ratio of 1.00 here means average achievement for students in general at this univrsity.

While there is a very considerable agreement between the ranks in intelligence and in achievement, there are two discrepancies which should be discussed in relation to other traits. The student who has a rank of nine in intelligence, for example, has a rank of three in achievement. He is a student, however, who had established a reputation in high school for being in the best twenty-five per cent of his class in eleven of the twelve traits of the scale. This perhaps is a partial explanation of his ability to make an achievement ratio of 1.56 at the university. On the other hand, student ranking two in intelligence with a Thorndike score of 91.8 fell to fourth rank in achievement with a ratio of only 1.18. His intelligence was very superior as measured by standardized tests but his achievement was relatively low. He did not make use of his intelligence in a way to achieve scholastic success. In high school, he had been rated in the lowest twenty-five per cent of his class in such traits as regularity and persistency, trustworthiness, sense of accuracy, respect for authority, and control of attention. In only one trait had he been rated in the highest quarter of his class, and that trait was self-confidence. With practically the same mental score, student number one in the intelligence rank column was highest of all in his achievement ratio. But he was a student who had been rated in the highest quarter of his high school class in every trait of the scale.

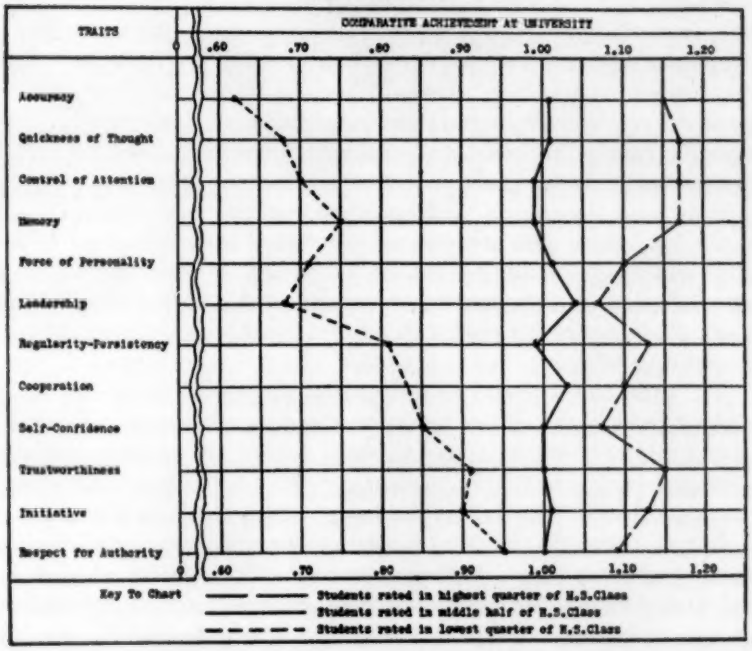
But nine students are not sufficient for purposes of generalization. Taking larger numbers, however, the findings are similar. In Chart IX we have brought together 64* of our high school graduates who entered the University of California, Southern Branch, in the fall of 1923 and the fall of 1924.

This chart is to be read as follows: Those students who, in high school, had been rated in the lowest quarter of their class with respect to accuracy earned, at the university, an average achievement of .62 while those who had been rated in the best quarter of their high school class achieved, in university, to the extent of 1.15, etc.

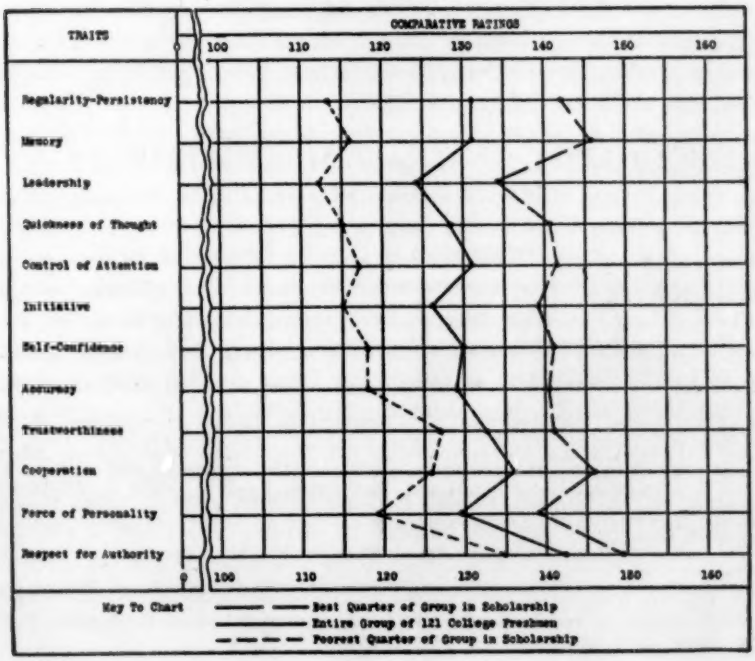
The "comparative achievement" at the university was derived in such a way that quantity of work as well as quality of work completed was taken into account. For example, a semester mark of A was given a value of 5 points; B, 4; C, 3; D, 2; E, 1; and F, 0. The total number of points earned by each student was then divided by 45, the number that a C student would earn when carrying 15 semester hours, and the quotient expressed as an "achievement ratio". A ratio of 1.00 would therefore indicate an average amount of work accomplished with an average degree of excellency.

*Records were complete, in all respects, for only these 64.

RELATION OF TRAIT RATINGS TO COLLEGE ACHIEVEMENT
(64 Freshmen in College D, 1923-24-25)
Chart No. IX



RELATION OF COLLEGE ACHIEVEMENT TO TRAIT RATINGS
(121 Freshmen in Colleges D, G, and C, 1923-24-25)
Chart No. X



In Chart X may be seen the comparative ratings of 121 freshmen according to their achievement classification in college. This includes the 64 mentioned above.

This final chart shows the general tendency for high scholarship to go with high ratings and low scholarship to go with low ratings. The tendency is more significantly shown, however, from the viewpoint represented in Chart IX. The study indicates, without doubt, the importance of including trait ratings in the records which are to be used for predicting college success or failure.

Summary

1. On the whole, the students to whom we accord highest honors in our high school graduating class are very superior to the rank and file of their fellows. A very small percentage of the honor scholarship students are mediocre or inferior with respect to any one of the twelve traits of our rating scale.

2. The graduate we send to college and university compares favorably with his high school fellows on every trait of the scale. Roughly, he represents a type about half way between that of the average student and the average honor scholarship student. Some of our graduates, however, whom we send to college fall in the lower rating levels of the scale.

3. Just as there are differences among our graduates as to their characteristics, so there are differences among colleges with respect to the kind of students admitted. Some of these colleges have attracted students who are consistently high in all points of the scale, while others have accepted applicants who range all the way from one end of the scale to the other.

4. We have shown that for all of the traits in our scale a rating in the best quarter of the high school class has a greater predictive value for college success than a rating in the poorest quarter of the class.

5. The study points rather conclusively to the importance of including trait ratings in the records of students.

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MENTAL TESTS AND THE ADMINISTRATION

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CALIFORNIA has perhaps higher requirements for its secondary school credential than has any other state in the Union. In preparing themselves to satisfy these requirements many students and teachers feel a certain impatience with the amount of work which they have to do and they occasionally question the wisdom of the requirements. Included among these subjects is mental testing and, since this one has to bear an undue proportion of the burden of impatience as is evidenced by the existence of numerous quips at its expense, I have thought that a fair statement of the case pro and con might be of value to some of the doubting Thomases.

Mental testing, or the measurement of the intelligence, appears to be somewhat uncanny, for it proposes to reduce to comprehensible figures a thing which cannot be readily apprehended by the human senses. It is, however, no more uncanny than is the radio which has become so large a part of our daily lives. Both operate according to known principles and, similarly, if either fails to function, the trouble usually lies with the operator. On the Pacific Coast one should not expect to hear Paris, nor should one imagine that a knowledge of the I. Q. of a pupil will immediately solve all of the problems in the teaching of that pupil. Much useful and reliable information, however, will result from this knowledge.

Probably the most important caution to be given is that the I. Q. must be used with a degree of intelligence which is at least normal. The I. Q. is a measurement of intelligence alone, and does not profess to give any indication as to attention, perseverance, reasoning, will power, concentration, or any other of the numerous factors which combine to produce a successful student. Intelligence is not the sole factor in scholastic success and consequently a measure of intelligence can not be expected to be an unfailing prophet of scholastic performance. Good school work cannot be expected from an I. Q. of 60 and good school work cannot be predicted from an I. Q. of 120.

Native Ability and Classroom Performance. Too great emphasis cannot be laid on the statement that native ability and classroom performance do not walk hand in hand. The truth of this statement is particularly apparent in high schools, for they contain a larger percentage of gifted pupils than do the grammar schools and these pupils frequently come from grammar schools where the classes have not been sectioned on the basis of the I. Q. High schools, therefore, have a serious problem with which to contend, viz. mental laziness on the part of gifted pupils. It sometimes appears that nature, to balance the gift of special ability, has implanted but a mediocre amount of ambition. As a result, the student who gets his work easily is prone to be content with just getting by, and

presently he fails to do even that small amount of work. Continuance of this practice forms a habit which has become pronounced by the time the student reaches the high school, and this fact demands a charge of T. N. T., since the application of the shingle has gone out of fashion. It is an undoubted fact that the teaching of a gifted section calls for more patience, more drive, and more real ability than does the teaching of a slow section.

Class Organization According to Intelligence. The great majority of our high schools have so large a number of students that classes must be divided into sections for efficient teaching. Various means are used to make up these sections, such as the preference of the pupil for a certain teacher, the time of day, etc. Since class-sections have to be made, it would appear reasonable that they should be constructed on a scientific basis and that pupils of approximately the same quality of intelligence should compose each section. Experience shows that such a division of pupils is more fair not only to the teacher but also, which is of greater importance, to the pupil. For the teacher it provides a field which is more even. For the student it furnishes a livelier competion, it removes that discouraged feeling which results from the presence of far superior mates, and it assures a pace which is suited to practically the entire class.

Tests Are Advantageous Aids. But even the advantages just enumerated pale into insignificance if this method of sectioning does not assist the teacher to force each pupil to work to his capacity. Here lie the great opportunity and the supreme problem of the high school. For the great majority of its pupils, the high school represents the capstone of their education and is also their final training for life. Their later success depends upon the utilization of their ability and the high school has the opportunity to teach them how to make the most of what has been given them. Class sectioning on the basis of the I. Q. provides the first step in meeting this opportunity. Thorough work in sectioning provides a valuable index of both the quality and the amount of work to be expected from the members of each section. Gifted pupils tend to lag behind their possibilities, but when they know that both the administration and the teacher are aware of what they can do they are less apt to try to "put something over".

Finally, no matter what advantageous aids may be furnished to the teacher, the problem of teaching still remains and is always of prime importance. Tests and measurements do not constitute a method of teaching, though they are an indispensable aid to it. Pupils will not teach themselves. The administration may remove some of the stones from the path of the teacher but it cannot tread that path for the teacher.

Objections Answered. Various objections to mental tests are proposed from time to time. It is true that these tests did not spring full-grown from the brain of their father, as did Athena, and it is probable that they will be improved. Nevertheless, they represent the best present measure that we possess of measuring the intelligence and it appears foolish to decry their use simply because there is a possibility that they may be

bettered. If one bears in mind the fact that intelligence tests must be used intelligently and that important decisions should not be made without a due consideration of all of the facts in the case, one cannot go far astray. The claim that children of real ability, who nevertheless work slowly, are handicapped by the time limit does not impair the value of the tests. It is true that they are handicapped, but it is also true that they always will be handicapped in the relations of life. The able teacher, however, will soon discover their worth and will make allowance for their slowness. As has been noted above, the whole question finally comes up to the teacher who is to be given all possible help but in whose hands lies the solution of the problem.

THE USE OF OBJECTIVE METHODS IN TESTING THE RESULTS OF INSTRUCTION*

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With the growth of a modern scientific attitude toward education during the past decade, there has developed a strong realization of the fact that we need accurate and reliable methods of measurement in education and also a more sorrowful realization that much of what we have been clinging to are deceptive straws in the ocean of educational investigation.

Old Methods Reveal Deficiencies

Numerous investigations during the past ten years reveal deficiencies in the old methods of examinations and grades based upon teachers' estimates. There has been a continual demand for a technic of measurement that would to a large extent obviate these discrepancies and bring about a more justifiable assigning of school marks.

Starch and Elliot at Columbia University created consternation ten years ago when they reported the results of an investigation which they had made. They secured a pupil's paper from an examination in plane geometry and had mimeographed copies sent out to teachers, of whom 116 responded. The teachers were merely to score the geometry paper as if it were one from their own class and assign a grade on the basis of 100, considering 75 as representing a passing grade.

It would seem that such a definite matter as scoring a geometry paper

*Educational Research Bulletin, Los Angeles, October, 1925.

would not afford any opportunity for misunderstanding or difference of opinion. It would seem possible that a paper in literature or one of the social sciences might cause trouble in scoring, but surely not such a definite matter as an examination in mathematics.

One teacher thought the paper was worth only a score of 28 and another teacher stated that the paper was so good that she felt it should be assigned a score of 92. The middle 50% of the grades assigned varied from 63 to 77. The complete distribution of marks is shown in the table below.

6	7	7	17	18	13	23	15	7	3	
Below	50—	55—	60—	65—	70—	75—	80—	85—	90	or
50	54	59	64	69	74	79	84	89	above	

Median of 70. Passing grade, 75. Range 28 to 92. Quartile deviation=7.

It will be noted that while the median of the grades assigned was 70, which was five points under the passing point, 25 of the teachers thought the paper was so good that they should give it a grade of 80 or above, which would place it in the recommended class.

If the condition is so astounding in such a definite subject as mathematics, what not might we expect in English literature where even the opinion of authorities doesn't agree? It simply means that we can not expect two teachers to agree as to the mark in an examination paper under the old system.

Many other similar experiments hight be related and additional studies in this field quoted, but the sample just given is fairly representative of what has been found in every case.

New Methods Suggested by Horace Mann in 1845

While it is true that the most rapid strides in the direction of improved methods has been made in the past decade, there is considerable cause for surprise in knowing just how long ago the first keen thinkers in education recognized the need of objective measurement. In 1845, Horace Mann, writing in the *Common School Journal* justifies the use of printed tests in school surveys. His appraisal of the method is most interesting and he points out a number of reasons why it deserves the serious attention of American educators.

Speaking of the new method of examination, Horace Mann stated: "It is impartial and just to the pupils. It is more true than older forms of examination. It prevents the officious interference of the teachers. It determines beyond appeal or gainsay whether the pupils have been competently taught. It makes the information obtained available to all. It enables all to appreciate the ease or difficulty of the questions."

To be sure, Horace Mann did not have in mind exactly the same type of objective examination as we are now using, and reference to the examinations used by the survey committee of 1845 shows that they were far

from being completely objective, but when we realize that Horace Mann was sounding the clarion call of the newer technic eighty years ago, we realize how little had been accomplished up to the beginning of the present century, and it is brought home forcibly that there is a wide gap between what ought to be done and what is actually being brought into educational practice.

Standardized Tests Developed

Many efforts have been made to improve the unfortunate situation which existed for so many years and many researches have been undertaken which have led to the development of a number of new methods of technic in educational administration. A large part of these investigations have culminated in the development of standardized tests.

The standardized test is in no way different from the old type of examination except that it is better. The old type of examination called the "thesis examination", permits the pupil to throw dust in the eyes of the professor, to evade answering the questions specifically and definitely, or on occasion to really and fairly misunderstand the question. Also, it demands a great amount of time on the part of the teacher to correct the papers. The new type of examination, on the other hand, provides definite situations to which the pupil must react and makes it possible to estimate the worth of his valuations in a definite manner.

A most estimable little volume by Dr. Ruch has recently appeared which sums up the whole matter in a very readable and understandable way. Dr. Ruch[1] distinguishes three functions of examinations: motivation, training in reading expression, and measurement. Educators seem to be agreed that pupils tend to accomplish more when a reckoning is at hand. The accomplishment of training in written expression is undoubtedly one of the most important factors in education. Measurement has, of course, been the most conscious method of all.

Types of Examinations

We can classify examinations into three types: (1) the old fashioned thesis type of examination, (2) the standardized educational test or scale, (3) the newer objective examination, which may be defined as examinations where the grade does not invlove the possible opinion of the grader. The newer type answers the question by underlining or checking the correct answer.

The standardized educational tests and the objective examination have much in common, the principal difference being that the standardized tests are prepared for wholesale commercial distribution and carry with them more or less complicated sets of norms, while the simple objective examination is constructed to meet a temporary or local need.

A number of types of different examinations may be identified as follows:

Simple Recall Questions. This is one of the easiest to use and under-

[1] Ruch, G. M.: The Improvement of the Written Examination. Scott Foresman & Co.

stand of the newer examination methods and consists in so phrasing the examination question that a blank is left for the last word and must be appropriately filled in by the pupil. 7—3=(4) and "the first bridge across the Rhine was built by (Caesar)" are both examples of the simple recall test.

Completion. This is really nothing more or less than a number of simple recall questions which are organized together to form a paragraph.

These simple recall questions and completion exercises make up the group which are known as recall types, which simply means that with this type of question, the pupil is expected to recall the right answer and put it down on his paper. Example of a completion exercise:

"The leaf of tobacco contains (nicotine), a poison which exerts a powerful action on the heart and on the nerve cells. The smoke from tobacco has (ammonia) vapor which irritates the throat and nose. It has been suggested that owing to the incomplete character of the combustion, tobacco smoke contains a small amount of (carbon monoxide), a poisonous gas. Experience shows that the use of tobacco may affect (digestion), or cause serious disturbances of the (heart) and impair the work of the (nervous system)."

Multiple Response. Instead of leaving a blank for the pupil to fill in, we may put down a number of possible responses only one of which is suitable, and let the pupil choose his answer. Example:

Shylock is a character in "King Lear", "Tempest", ("Merchant of Venice"), "Cymbeline", "Two Gentlemen of Verona", "Julius Caesar", "Midsummer Nights Dream". The number of responses given depends upon the opinion of the person constructing the examination, but five or seven responses have been found to be relatively satisfactory.

True-false. The pupil may be given a number of statements, some of which are true, and some false. He is expected to identify these and mark them. Example:

The South has always looked upon the question of slavery primarily as a moral tssue. true (false). The use of alcoholic beverages prepares the way for many other diseases. (true) false.

Best Answer. This is much like the multiple response type except that instead of merely one word being supplied for each response, a complete sentence is supplied. Example:

The study of arithmetic is useful because, 1. (it fits us for our daily life). 2. It makes teachers give us good marks. 3. It shows us how to buy things with money.

The plays of Shakespeare are still widely read, 1. because they are full of exciting stories about pirates, 2. we can't graduate from high school unless we study them, 3. (its philosophy is universal and applicable to all races and nations).

Matching Exercises. This kind of examination consists of giving two lists of things which are connected in paragraphs but which are not ar-

ranged in order. The pupil is supposed to indicate by numbers the paragraphs that should go together. Example:

AUTHOR

1. Sir Walter Scott
2. Shakespeare
3. Goldsmith
4. John Bunyan
5. Swift

BOOK

(3) Vicar of Wakefield
(1) Ivanhoe
(5) Gulliver's Travels
(4) Pilgrim's Progress
(2) All's Well that Ends Well

Identification. This type of test is very similar to the best answer method except that the possible answers are expanded into more of a descriptive paragraph.

It should not be thought that an examination should be particularly of any one of the foregoing examination methods. In fact, the best examinations are those which contain a liberal sampling from most of the different types. Complicated statistical standards have shown that each of the foregoing types has some particular advantages and for this reason it is advisable to include a number of different types.

Although these various methods of examinations look somewhat formidable, they are really no different from the old methods of examination except that they are better. They do not constitute any cure-all for educational difficulties, but they do afford us a more reliable and accurate way of measuring to what extent the pupils have absorbed our instruction and in how far they have developed the ability to organize their thought.

It might well be kept in mind that an objective examination should actually measure what it purports to measure, that it should measure accurately and precisely, that the examination should lighten the work of both teacher and pupil, and lastly that it should provide a basis of comparison of one pupil with another.

STUDIES IN SECONDARY EDUCATION

Conducted by MERTON E. HILL
Principal, Chaffey Union High School and Junior College, Ontario

It is not my purpose to present in these columns my own observations, but to present what I have gathered from other teachers. In this number of THE QUARTERLY, *we shall have the teacher's treatment of "Objectives" and "Misfits".*

If it is true that there are certain objectives of secondary education, it must be true that we should get these objectives over to our students. The objectives of secondary education as set forth in the Report of the Committee on the Reorganization of Secondary Education are: (1) health, (2) command of fundamentals, (3) worthy home membership, (4) civic education, (5) vocational education, (6) worthy use of leisure, and (7) ethical and religious character.

These objectives must be translated into life realities by the teacher through courses of study and school activities. The following departmental presentations are helpful, and will be good material for faculty meetings.

M. E. H.

How May I Secure Through My Department the Objectives of Secondary Education?

THROUGH AGRICULTURE

By MYRON R. HARRIS

Health. Everything depends on good health. Poor health is a big handicap. Agriculture has a wonderful tendency to give to its students strong bodies. It takes them outdoors and keeps them out. Indoor classes can be only a fraction of the course of study. Fresh air and exercise go hand in hand with agriculture.

Fundamental Processes. The farmer must keep books. He must forever be putting down expenses, of which there are many, and income, if any. His work must be careful, his figures accurate. They tell the whole story of his business.

The agriculturist must keep informed on the operations of other farmers and on government investigations. All the material is to be had for the reading. His bookkeeping, his reading, and his experience give him an intelligent basis on which to work out his problems. How can he improve his trees most quickly and cheaply? How can he fatten his hogs, keeping in mind their condition, natural tendencies of breed, and available time and means? How can he increase yields? Where is the point where profitable expenditure leaves off and waste begins, where

increase in crops ceases to pay in proportion to increase in expenditure? He must experiment, observe, and reach right conclusions.

Worthy Home Membership. The agriculturist is on the home plant, and he is with his family a greater part of the time than is the usual business man. He can, therefore, take over his share of home duties, and of the care and instruction of his children. The agricultural instructor has an opportunity to become intimately acquainted with his pupils. He oversees their home work and helps them solve their problems.

Vocation. Agriculture is a necessary vocation. Someone must produce food. The rancher is a producer. This makes for self-respect, for happiness and contentment. Agriculture is, moreover, an interesting vocation, and appeals to a variety of natures. Its outdoor life appeals to the lover of the open spaces. Its problems invite the student and scientist. All the branches of natural science bring their students to the soil. The ranch or farm is the most dependable source of income; wherever the proficient agriculturist goes, he will prosper.

Citizenship. Health, intelligence, love of family, industry, and contentment are necessary attributes of the good citizen. The instructor in agriculture has abundant opportunity to develop these virtues in his pupils.

Leisure. Agriculture is full of potential hobbies to fill our spare time. There are so many interesting facts about the myriad forms of life around us. Insects and birds have always been the victims of boyish interest. Change the word "victim" to "subject", and the study may be profitable as well as fascinating. The same observation applies to plants. Much can be done in a small place, and plants respond to work and interest so quickly that one is never disappointed.

Character. But what shall be said of ethical character? But we already have it. It is the result and combination of the other six objectives. When one has combined good health, command of fundamental processes, worthy home membership, good citizenship, interesting, self-respecting and lucrative vocation, and worthy use of leisure, he can scarcely fail to possess an ethical character.

THROUGH INDUSTRIAL ARTS

By J. H. PAULIN

In writing this paper I am thinking of Junior High School boys and of the woodwork division in particular. The same things would be true to a greater or less extent in the machine shop, the drawing room or any of the other divisions.

Health. Physical exercises needed in the handling of tools are conducive to physical health, above that of the ordinary class room. Physical strength is necessary to the successful completion of a project. The instructor has opportunities for talks on many health topics.

Fundamental Processes. The student must know how to read his ruler, gauges and other tools quickly and correctly. Mathematics is con-

stantly being used. Design calls for the operation of many principles of geometry. The instructor has opportunity of showing the student the practical application of the mathematics he learns in the class room. Oral and written English are necessary. Correct use of English should be insisted upon.

Worthy Home Membership. How long we suffer from the door that sticks, the hinges that squeak, the faucet that leaks, the flat iron that only operates part of the time, and so on, all because we do not know just how to fix them. The fact that the boy is taught how the many little inconveniences of the home can be overcome with little effort surely leads to more worthy home membership.

Vocation. The boy has an opportunity through actual work to find himself; to discover what lines of work he likes and what he dislikes. The effort is made to guide the boy into the vocation that he is best suited for. As Professor Thomas H. Briggs, of Columbia University, says, "By the time the boy has reached his tenth grade he should have settled into a course leading to training in a definite vocation". The limited number of trade courses that can be offered in the shop can be supplemented by trips through various local industrial plants. Wage and working conditions can be studied.

Citizenship. The freedom of the shop gives many opportunities to teach citizenship. Several boys may want to use, at the same time, some tool, of which there is only one. Co-operation is necessary. One of the qualities of good citizenship is clear, independent thinking. In the shop the student is placed largely upon his own resources. I have only one rule in the shop; that is the one word, "Think", printed in large letters in front of the class room.

Leisure. A worthy use of our leisure time demands that we appreciate the beautiful and better things of life. An appreciation of the difference between good design, good architecture, good construction and poor design, poor architecture, and poor construction, can be developed in the shop. The creative ability also can be developed until it becomes a hobby from which much useful and pleasant enjoyment may be gained. Witness the night classes in the woodshop. The enrollment in this course is always full. Men spend many leisure hours here in useful and constructive work.

Ethical Character is the result of the gradual development of all our capacities in right directions. The shop instructor has a chance to get close to the individual boy, giving him an opportunity to inspire to right living, as perhaps no other teacher has. The creative ability developed and the sense of independence gained in the shop are qualities of character that contribute much toward the aims and ends of public education.

THROUGH AMERICANIZATION

By FLORENCE H. GODLEY

I am an Americanization teacher, the home teacher of a large water front school. My work is outside the high school and almost entirely with adults, but the seven objectives blaze as brightly over this field of education as any other.

Health. This comes first—the health of hardworking men, careless of the cough or little injury that may later cost them much; the health of ignorant women, pinning their faith in old country tradition and fearful of the American doctor; the health of little children, some times subject to neglect that may have tragic consequences. Health teaching directly and indirectly runs through all my work. I prepare lessons for the men in evening school, different lessons suited to the women day time. I make trips to the clinic and baby center, piloting mothers who could not find their way alone. My advice is usually sought after confidence is established, and frequently acted upon with an exactitude that is touching.

Fundamental Processes. My pupils have little need of much we stuff into the children. They have one monumental task, learning our language, and to help them break down the wall that shuts them away from us is the supreme task of the Americanization teachers. My pupils want desperately to learn, but they are weighted down with doubts and inhibitions and befogged with deepest ignorance. This work is as different from ordinary teaching as rescuing a drowning man is different from making a small boy wash his ears.

Worthy Home Membership. Our American ideal of manhood is something very foreign to the immigrant who comes from countries where the woman is regarded as among the least of her husband's possessions. The older generation usually cannot mend its ways, but the young men listen eagerly to expositions of American modes and morals. Sometimes the women learn their rights. I wish I could tell you of a little Portuguese woman whose eyes grew bright as she learned of the protection a woman could hope for from our laws, and she is now hewing her way out of a marriage that was degrading to herself and demoralizing for her children.

Vocation. Here my hands are more or less tied. Seven years ago I preached and believed that coming to school led to a better job, but it is seldom true except with the better educated young newcomers. Economic pressure is too great for the unskilled laborer with a family to try new fields. His day laborer's job is as much as he can hope for and he usually knows it. He comes to school for something else, an esthetic groping, a hunger for something that shall satisfy the spirit, an innate self-respect that leads him to self-improvement for improvement's sake. I sometimes glimpse abilities by which a man might have lived comfortably, if they had been trained in time. It proves the need of vocational education.

Citizenship. I should, perhaps, wax eloquent over citizenship. It is the end and aim of my professional existence, why I am harbored in the

schools. But I am not moved to eloquence except to urge all Americans to raise their citizenship to the standard some of my pupils display.

Leisure. It's the working man's leisure that he devotes to his education, and he is open to suggestion as to how to spend time not provided for at school. It is to the school that the foreign-born are looking now for much of their recreation.

Ethical Character. How anyone can escape with less than 100% ethical character after the six other aims have been fully attended to, puzzles me; but that is aside from the point. My pupils come to me with their character pretty well established. I cannot hope to mould it.

THROUGH PHYSICAL EDUCATION

By VERA W. INGRAM

The seven cardinal principles of secondary education seem, by their nature, to have been drawn up by a committee composed of individuals primarily interested in physical education and public speaking. In these two fields there is no end of ways and means of securing those objectives.

Physical Education. Health is the "pass word" of physical education, the principles of which are the foundation of all physical education programs. By means of our daily exercises we give the normal individual that feeling of exhilaration which increases his power of efficiency and self respect. Through our physical examinations we ascertain the physical deficiencies of the various students with whom we deal. They are then classified in such a manner that each individual need may be met, scientifically. The subnormals and the abnormals are given the proper stimulus for the feeling of well being. By means of sports and the accompanying or voluntary training, we encourage the most advantageous way to healthful sleeping, eating,and exercise.

Public Speaking. Physical self respect, the feeling of exhilaration and well being, are of greatest importance in the field of public speaking, for in that field, as in almost no other, one must have poise, carriage, and mobility of body to set off the excellence of one's subject and subsequent treatment of the subject.

These two fields of activity supplement each other in the development of physical and mental power, health, and culture, which are essential to worthy home membership, good citizenship, worthy use of leisure, and ethical character. They encourage interest in athletics, art, literature, plays, and musicals. When the body and mind are healthy and active, the spirit uniting them is bound to be discerning and harmonious.

Fundamentals. As to the command of fundamental processes and the vocational objective, physical education and public speaking still share honors with other school activities. Reading, writing, and the arithmetical sense of proportion, reasoning and judgment, are developed to a high degree, especially in the field of debating. Speed and accuracy are characteristic of students cultivating the art of debate. Oral and written expression and interpretation are the most valuable results of an effective

command of fundamental processes, as well as of prime importance to successful vocational training.

Physical education and public speaking give complementary support to poise of body and mind, self respect, and well-being, and furnish the student with an appreciation of and dynamic interest in his chosen work. A student so trained will be "alive", his attitude toward life will be appreciative, and he will be co-operative with society in meeting his responsibilities.

THROUGH MECHANICAL DRAWING

By JOHN HOMEWOOD

The seven cardinal principles of education are well covered in the following explanation of the relation of mechanical drawing to the other departments of the school:

Physical Education. The student is cautioned about careless sitting, misuse of the eyes in working too close to the drawing board, and the dangers involved by carelessly handling instruments.

English. Correct spelling, punctuation, and simply constructed sentences are a necessity on a drawing. Some drawings are not clear when not accompanied with notes; these notes should be definite in their meaning.

Mathematics. Mechanical drawing is the playground for mathematics. Mensuration, arithmetic, geometry, algebra, and trigonometry are indispensable to a draftsman.

Chemistry. The making of blueprints brings out a desire to know more of the subject of chemistry. The student sees the result of the action of the sun's rays upon the two chemicals combined on the paper; he also sees the part played by another chemical in restoring a print that has been over exposed.

Art. A drawing, in order to be pleasing to the eye as well as to answer its fundamental purpose, must be arranged in such a way as to maintain a balance. Freehand drawing is indispensable to a draftsman; he must be able to make sketches of objects.

Foreign Language. The terms used in drawing are, to a great extent, derived from Latin or Greek. The student is urged to look up the meaning of terms he is not familiar with, so that he will thoroughly understand their meaning.

Citizenship. The students in mechanical drawing are working together in such a way as to bring out the spirit of co-operation and good citizenship.

Vocation. The vast majority of young people will eventually enter some kind of gainful employment. Mechanical drawing is in itself a vocation in which there are untold opportunities. One who can produce a drawing that can be read intelligently by another is better fitted for many lines of work.

The course in mechanical drawing is not for the sole purpose of

enabling a student to earn a living as a draftsman. It serves to sharpen the mind by constant visualization and reasoning, to bring the mind and hand into better co-ordination, to cultivate grace in handling a pencil, and in training the student to think and to concentrate.

WHAT TO DO WITH MISFITS

Solution by
MARIE L. MYERS

The "misfit", so-called, is a student who does not succeed in his work or who does not co-operate in the social life and discipline of the group to which he belongs. The student's teacher, preferably his advisor, or one who knows him best, should make a special investigation of all available data about him, in order to find out the cause or causes of his lack of adjustment. All past records about him should be examined; his scholarship, data collected on his I. Q. in an attempt to determine whether or not he is capable mentally of the course he is following; an investigation of his physical condition and state of health; his home conditions, his tastes and likes, ambitions and future plans. Having determined by this means the probable cause of the difficulties, the teacher is in a position to advise the student how to help himself to alleviate and alter the situation, as the student in most cases is very desirous of doing. Perhaps his course should be changed. Usually the misfit, if physically capable, is pursuing a course of which he is mentally incapable, and at which he could never succeed. He can be guided into a line of work, however, by a wise and sympathetic teacher, in which he will find more pleasure and happiness because of a greater degree of success.

Solution by
PAUL S. HUNGERFORD

This problem is little more than that of individual differences. There may be many reasons for a student not being fitted for a certain course. It may be due to his lack of interest, or to various other causes such as poor health, lack of proper guidance, or he may be mentally abnormal.

In solving this problem the teacher should first ascertain, if possible, the cause of the pupil's failure. If the fault is due to lack of interest or guidance, the solution of the problem is largely the teacher's; if the trouble comes from poor health, the teacher again is respsonsible to see that medical attention is provided.

If the pupil is mentally abnormal, and unfitted for the work there surely must be something he can do. Vocational subjects are good for such students. The teacher should guide such pupils into vocational classes. Individual instruction is also suggested.

Solution by
ANNA ADELSON

The Los Angeles city schools have met the problem of adjusting the child considered a "misfit" by placing him in one of three rooms—opportunity, development, or adjustment room. These rooms are under the supervision of the Department of Psychology and Research, and each child is given a mental test and intelligence tests to determine in which room he should be placed. As far as the child is concerned, he is not stamped as a "misfit", but is given an opportunity to work in a smaller group (usually 22 in number) where he can mingle with children of his own abilities and capacities, and where he can work at his own rate of speed.

As I had charge of a girls' opportunity room for the past two years, I had excellent opportunity to make studies of the girls under my supervision. For the most part, these girls ranged in age from 14 to 16 years and were actually doing low fifth or sixth grade academic work. As I did not have to follow the regular course of study, I had ample opportunity to study each individual case. I delved very carefully, and in a way unknown to these girls, into the causes of their backwardness or the reasons why they did not fit into the regular grade.

Solution by
V. E. SOLVASON

The most important thing is to determine the cause and to remove it, if possible. If a pupil is trying to do his best in a class, and yet can not keep up the work, it may be that he has not the necessary preparation, or that he is not of the same mental ability as the other members of the class. If his difficulty is due to insufficient preparation, he should cover such preparatory work before he proceeds. If it is due to general dullness and lack of mental ability, the pupils deserves sympathy, help, and co-operation on the part of the teacher. My sympathy is always for the pupils who have good attitude and strive to advance, yet are handicapped by a lack of normal alertness and mental ability to grasp things quickly.

Pupils may also be misfits because they have no interest or aptitude for the work they are required to do. Here the first thing to do is to arouse the interest of the pupil in the special subject. If he does not have an aptitude for the special subject in question, he had better make a change as soon as possible and take up work to which he is more adaptable. There are many kinds of misfits and there are many causes for misfits. The causes must first of all be ascertained, and then the remedy determined. Pupils, like adults, are often misfits, not due to lack of ability but rather due to misdirected energy and participation in work for which they are ill fitted. The remedy in most cases is substitution.

Solution by
H. LEE PECHOTA

As no provision is made for misfits in my department of woodshop, it is up to me to conceive a plan whereby I might constructively help such pupils to utilize their time to the most profitable advantage. I adopt this plan.

1. Analyze the situation and remove the cause of the condition if possible.

2. Require pupils to complete a minimum amount of fundamental work. I try to intercorrelate this work with any subject or outside activity that I find they may be interested in.

3. I stress academic and the technical phase of the work and substitute outside reading, reports, and written work for the mechanical work which they are not adapted for.

4. I substitute work along any vocational line in which I can create an interest, such as radio, electricity, cobbling, drawing, designing or shop foremanship, in the place of required woodwork.

Solution by
WELLS SMITH

A "misfit" is one that does not fit well into the school work as ordinarily planned, particularly the traditional courses of study. In other words, the "misfit" is the unusual type of pupil. What shall we do with him?

In the first place, it is well to bear in mind that being unusual does not necessarily mean to be inferior. Some of our brightest pupils have been thought of as "misfits". Every child is born with certain capacities. Perhaps Socrates could never have become a Mozart, nor Mozart a Socrates.

The solution of the problem is simple. Find what the interests and capacities of the "misfit" are, and then provide work in harmony with them. One example that came under my observation will illustrate. The boy's name was ————————. His class work was poor; he would waste his time drawing pictures of any and everything. He even drew them of his teachers. Complaints were made. A little investigation revealed that the boy had real artistic ability. We provided him an opportunity to follow his interests as best we could. Today he holds an important position in Boston, doing work for which he had capacity. The solution, therefore, is simple: Find what the "misfit" can do and let him do it. Provide work that fits him.

A SELECTED AND ANNOTATED BIBLIOGRAPHY ON STANDARDIZED TESTS FOR SECONDARY SCHOOLS

Prepared by

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With the assistance of Graduate Students in Education

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I. EDUCATIONAL TESTS

A. Mental Ability Tests

1. Miller Mental Ability Test: W. S. Miller, University of Minn.; World Book Co. 1921. $1.00 per 25, specimen including manual, 25c; Grades tested, 7-12; Time required, 30 minutes.

Purpose: To measure mental ability. The test is in three parts. Test 1, a combination of the disarranged sentences test and the directions test. Test 2, a control association test which serves as a vocabulary test. Test 3, a modified mixed relations or analogies test.

2. Otis Group Intelligence Scale: Arthur S. Otis, Test Editor, World Book Co. Publisher: World Book Co. 1919. $1.40 per 25, key 20c, manual 30c. Grades tested, 5-12; Time required, "Time limit" test, 1 hr.

Purpose: An absolute point scale designed to measure scientifically and rapidly in groups, native mental ability; the results of the test to be used for any administrative need.

3. Terman Group Test of Mental Ability: Lewis M. Terman, Professor of Education, Stanford University. World Book Co. 1920. $1.55 per 25; Specimen set 15c, postpaid; Grades tested, 7-12; Time required, "Time limit" test, 35 minutes.

It is composed of ten separate tests as follows: (1) information; (2) best answer; (3) word meaning; (4) logical selection; (5) arithmetic; (6) sentence meaning; (7) analogies; (8) mixed sentences; (9) classification and (10) number series.

Purpose: By means of a group test to obtain a measure of intelligence for purposes of classifying pupils, vocational guidance, and other administrative needs.

B. Subject Matter Tests

1. Commercial

1. A Series of Tests in Gregg Shorthand, Test A-1 Reading Ability: Elmer Hoke, Lebanon Valley College, Annville, Pa. Gregg Publishing Co. 1922. 30c per 13 tests, single copy, 3c; Grades tested, classes in shorthand; Time required, 3 minutes.

Purpose: To measure pupil's ability to read shorthand, composed of 2 business letters to be read; choice of words is also required.

2. A Series of Tests in Gregg Shorthand. Test B-1 and B-2. Speed in Writing: Elmer Hoke, Lebanon Valley College, Annville, Pa. Gregg Publishing Co. 1922. 30c per 13 tests, single copy, 3c; Grades tested, any class in shorthand; Time required, 3 minutes.

Purpose: To measure pupil's ability to write shorthand. Two forms are given, B-1 and B-2. Each test is composed of a list of 400 words, printed in both longhand and shorthand. Pupils are required to write the shorthand outlines neatly and rapidly.

3. A Series of Tests in Gregg Shorthand: Test C-1 -10, Vocabulary: Elmer Hoke, Lebanon Valley College, Annville, Pa. Gregg Publishing Co. 1922. 30c per 13 tests, single copy, 3c; Grades tested, classes in shorthand; Time required, not "time limit" test.

Purpose: To measure pupil's ability to use the 1000 most common words and the 500 most common phrases. It is composed of a series of 10 tests.

4. Blackstone's Stenographic Proficiency Tests: E. G. Blackstone, Publisher, World Book Co., Yonkers-on-Hudson, New York. For use in commercial schools, grades 9 to 12. Time required, 3 minutes. $1.00 per package of 25, for either Form A, B, C, D or E. Specimen set containing one each of the five forms, a manual of directions, a percentile graph, and a class record, 25c.

Purpose: To measure proficiency in typewriting. Five forms are given: A, B, C, D, and E. These forms measure proficiency of progress at different stages of development.

5. Cody's Commercial Tests and How to Use Them: Sherwin Cody, Managing Director, Business Standards Association. World Book Co. 1919. $1.20 per single copy; Grades

tested, no information; Time required, 5-20 minutes each.

Purpose: To measure business ability of pupils. Part II consists of tests on all phases of business abilities; as tests in letterwriting, typewriting, bookkeeping, English, Arithmetic, etc. The tests are designed to measure students' work in terms of business standards.

6. **Measuring Scale for Gregg Shorthand and Penmanship:** Elmer R. Hoke, Lebanon Valley College, Annville, Pa. Gregg Publishing Company. 1922. 25c per single copy; Grades tested, classes studying shorthand; Time required, 2 to 5 minutes.

Purpose: To measure pupil's ability to write shorthand. The scale is composed of sixteen samples of shorthand writing, ranging in value from 0.0 to 95.0.

7. **Prognostic Test of Stenographic Ability:** Elmer Hoke, Lebanon Valley College, Annville, Pa. Gregg Publishing Co., 285 Fifth Ave., New York City. 1922. In experimental stage; 1½c each for experimental material; Grades tested, Pupils studying stenography; Time required, 20-30 minutes.

Purpose: To predict stenographic ability. There are six tests: (1) Motor reaction, (2) Speed of writing, (3) Quality of writing, (4) Speed of reading, (5) Memory, (6) Spelling and (7) Symbols.

8. **Thurstone's Typist Test:** L. L. Thurstone, Carnegie Institute, Pittsburg. World Book Co., Yonkers, N. Y. 1922. $1.50 per 25; Grades tested, no information; Time required, not a "time limit" test.

Purpose: To select office clerks for typists and Junior stenographers. It is composed of three parts: I—Consists of a typewritten copy that has been corrected, Part II—Consists of items in tabular form under proper headings, Part III—Consists of sixty words, some of which are misspelled.

2. English.

a. Composition.

1. **Briggs' English Form test:** Thomas H. Briggs, Teachers College, Columbia University. Bureau of Publication, Teachers College, Columbia University. 1921. 90c per 100, Alpha or Beta; Grades tested, 7-9; Time required, not "time limit" tests.

Purpose: To measure the pupil's knowledge of the common elements of English composition. It is composed of two parallel forms, Alpha and Beta, of equal difficulty and alike in plan. Each test consists of twenty sentences to be punctuated.

2. **Hudelson's Typical Composition Ability Scale:** Earl Hudelson, University of Minn. Publisher, Public School Publishing Company, Bloomington, Ill. 1923. $1.00 per 25. Single copy, 10c. Teacher's Handbook separate, 10c. Grades tested are first through University. Time required, 20 minutes.

Purpose: To classify pupils fairly in composition. It enables the writing proficiency of each pupil and of classes and schools to be objectively and accurately measured. Provides pupils with an incentive and immediate goal for self-competition.

3. **Cross English Test:** E. A. Cross, Teachers' College, Greeley, Col. Publisher, World Book Company, Yonkers-on-Hudson, New York. 1925. $1.20 for 25 examination booklets with 1 manual of directions, 1 key and 1 class record, for Form A, or Form B, or Form C. Specimen set of 1 examination, 1 manual of directions, 1 key to each form and 1 class record for 25c. Used as final examination for high school seniors.

Purpose: To measure general ability in English, spelling, pronunciation, sentence structure, punctuation, verb forms, pronoun forms, idiomatic expressions, and miscellaneous faulty expressions.

4. **Lewis' English Composition Scales:** (For Measuring Business and Social Correspondence): Ervin E. Lewis, Flint, Mich. World Book Co. 1923. 25c; Grades tested, 4-12; Time required to evaluate the pupil's prod-

uct, 2 to 10 minutes, depending upon the experience of the scorer.

Purpose: To provide a series of samples of known values by which to evaluate the products of a pupil in the writing of order letters, application letters, narrative social letters, expository social letters, and simple narration.

5. **Diagnostic Tests in English Composition:** Capitalization Test by S. L. Pressey and E. V. Bowers, price 75c per 100; Punctuation Test by S. L. Pressey and Helen Ruhlen, price 75c per 100; Grammar Test by F. R. Conkling and S. L. Pressey, price $1.50 per 100; Sentence Structure Test by F. R. Conkling and S. L. Pressey, price $1.50 per 100; sample set including all four tests, 15c. All authors, Ohio State University. Publisher, Public School Publishing Company, Bloomington, Ill.

Purpose: To show the frequent tendencies to error. Based on careful analytical study of present usage in magazines, newspapers, and business and social letters. Median scores for each state in the United States as well as for Canada are given.

6. **Van Wagenen English Composition Scales:** M. J. Van Wagenen, University of Minn. World Book Co. 1923. 25c per single copy, net. Time required to score, 2-10 minutes.

Purpose: It is composed of separate scales for exposition, narration, and description. Thought content, structure and mechanics are scored separately and averaged for a general merit score.

7. **Willing Scale for Measuring Written Composition:** W. H. Willing. Public School Publishing Co., Bloomington, Illinois. 1920. 9c per single copy, 3 or more copies, 6c each; Grades tested, 4-9; Time required, 25 minutes for writing and correcting papers.

Purpose: To measure "story value" and "form value." The scale is composed of eight compositions, ranging in value from 20 to 90. Two qualities recognized; "Story value" means completeness and "form value" is determined by number of mistakes found in spelling, etc.

b. Grammar and Punctuation

1. **Charters' Diagnostic Grammar Test:** W. W. Charters, Carnegie Institute, Pittsburg. Public School Publishing Co., Bloomington, Illinois; Published, no information. $1.50 for each part, 10c per sample; Grades tested, 7 and 8; Time required, not a "time limit" but will occupy two periods.

Purpose: Diagnostic. It consists of Forms I and II. The test is composed of exercises on the use of verbs, pronouns, etc.

2. **Diagnostic Tests in English Grammar, Punctuation and Capitaliztion:** S. L. Pressey, Ohio State University. Publisher, Psychology Department of Ohio State University, Columbus, Ohio. 1922, revised 1923. 6c per single copy; Grades tested, 7 to 12 and college; Time required, 5 minutes.

Purpose: Diagnostic.

c. Handwriting

1. **Ayres' Handwriting Scale:** L. P. Ayres, Russell Sage Foundation. Public School Publishing Co., Bloomington, Illinois. 1917. 18c each, 3 copies or more, 14c; Grades tested, elementary or high school; Time required, 2 minutes.

Purpose: To measure speed and quality in handwriting. The scale is composed of eight specimens of handwriting, arranged in the order of quality from 20 to 90. Speed is counted or determined by counting the number of letters written in the time given for the test.

2. **Palmer Handwriting Scale:** A. N. Palmer. Publisher, A. N. Palmer Company, 30 Irving Place, New York City. For grades 1 to 8.

Purpose: To measure improvement of handwriting of individual pupils by comparison with standards.

3. **Zaner's Handwriting Scale:** C. P. Zaner. Publisher, Zaner & Bloser Company, 118 N. High Street, Colum-

bus, Ohio. For grades 1 to 12.

Purpose: To provide a measure for the results obtained from teaching handwriting. There are three scales in this group.

d. Language

1. **Charters' Diagnostic Language Tests:** W. W. Charters, Carnegie Institute of Technology, Pittsburg. Public School Publishing Company, Bloomington, Illinois. 1918, revised 1922. 80c each part, sample 10c; Grades tested 2 to 12c; Time required, not "time limit" test.

Purpose: Diagnostic. It consists of five separate tests, miscellaneous A and B, Verbs A and B, and Pronouns. Each contains 40 sentences, some correct and some incorrect.

2. **Wilson Language Error Tests:** G. M. Wilson, Boston University. World Book Co. 1923. $1.25 per 25, specimen, 15c; Grades tested, 3 to 12; Time required, 5 to 15 minutes.

Purpose: To measure pupil's ability and to detect common language errors. It consists of three short stories, each containing twenty-eight language errors, which research studies have shown to be the most common errors. Correcting the story is done by the pupil.

e. Poetry.

1. **Abbott-Trabue's Exercises in Judging Poetry:** Allen Abbott and M. R. Trabue, (Abbott) Teachers' College, Columbia University, (Trabue) University of North Carolina. Publisher, Bureau of Publications, Teachers' College, Columbia University. 1921. $7.50 per 1000; single copy, 8c, series X or Y; Grades tested, 7 to 12; Time required, 45 minutes.

Purpose: To measure appreciation of poetry. It consists of two parallel series of poems, X and Y. The series are equal in difficulty and each series consists of 13 sets of poems of four each.

f. Reading.

1. **Thorndike's Test of Word Knowledge:** E. L. Thorndike, Teachers College, Columbia University. Publisher, Mason W. Gray, East High School, Rochester, New York. 1921. $1.50 per 100; Grades tested, 4 to 10; Time required, 20 minutes.

Purpose: To measure word knowledge of pupils. The test is composed of 100 exercises. Each exercise contains several words. The first word in the exercise is the keyword; the pupils are to find the other words in the exercise that mean the same.

2. **Monroe Silent Reading Tests:** W. S. Monroe, University of Illinois. Publisher, Public School Publishing Company, Bloomington, Ill. Revision of test, 1925. Each test consists of 2 parallel forms. Test 2 for grades 6, 7, and 8. 90c per hundred. Test 3 for high school pupils, $1.00 per hundred. In quantities less than 100, 1¼c per copy. Specimen set, both forms of any one test, 10c. Specimen set, all forms of all tests, 20c.

Purpose: To test the reading ability of the pupils in the various grades. Form 3 is issued in two tests which were so satisfactory as not to necessitate revision at the time Forms 1 and 2 were revised.

3. **Thorndike-McCall Reading Scale:** E. L. Thorndike and W. A. McCall, (Thorndike) Teachers College, Columbia University, (McCall) Teachers College, Columbia University. Publisher, Bureau of Publications, Teachers College, Columbia University. 1920. $2.00 per 100; Grades tested, 2 to 12; Time required, 20 to 30 minutes.

Purpose: To measure comprehension in reading. The scale is composed of ten or eleven paragraphs, arranged in order of difficulty. Ten forms of approximately equal difficulty are available.

4. **Van Wagenen Reading Scales:** M. J. Van Wagenen, University of Minn. Public School Publishing Co., Bloomington, Illinois. 1922. Per 100 for either History, Science or Literature tests, $3.00; Grades tested, 7 to 12; Time required, about 50 minutes.

Purpose: To measure pupil's ability to read and comprehend English litera-

ture, history or general science. There are three separate scales, one dealing with English literature, one with history, and one with general science. Each scale is made up of fifteen paragraphs, arranged in three groups.

g. Spelling

1. **Iowa Spelling Scale:** E. J. Ashbaugh, Ohio State University, Columbus, Ohio. Publisher, University of Iowa, Iowa City, Ia. 1919. Not for distribution; Grades tested, 2 to 8; Time required, no information.

Purpose: To measure spelling ability of elementary school pupils. The scale is composed of 2977 words arranged in three separate scales. Scale 1 contains 28 steps and is designed for grades 2, 3, and 4. Words are of approximately equal difficulty. Grades 6, 7, and 8 contain fifteen steps.

2. **Seven-S Spelling Scale:** T. H. Briggs and T. L. Kelley, Teachers College, Columbia University. Publisher, Bureau of Publications, Teachers College, Columbia University. 1920. 40c per single copy; Grades tested, 7 to 12; Time required, about 15 minutes.

Purpose: To measure spelling ability of pupils. The scales are composed of sixteen lists of 20 words, each standardized in sentences. Words to be spelled are incorporated in sentences; the sentences containing the words to be spelled are read, then the words are pronounced.

3. **The Buckingham Extension of the Ayres Spelling Scale:** B. R. Buckingham, Ohio State University. Public School Publishing Co., Bloomington, Illinois. 1918. 14c per single copy, 12c each, for 3 or more copies; Grades tested, 2 to 9, inclusive; Time required, not a "time limit" test.

Purpose: To measure spelling ability of pupils. It is composed of 1505 words. Words in each column are of approximately equal spelling difficulty.

h. Vocabulary

1. **The Inglis Tests of English Vocabulary:** Alexander Inglis, Graduate School of Education, Harvard University. Publisher, Ginn & Company, New York, N. Y. Forms A and B are available for distribution. Standards given for 9th, 10th, 11th and 12th grades. 72c for package of 30 tests of either form, including directions, key, standards and class record.

Purpose: This test is designed to measure the student's knowledge of intelligent general reader's vocabulary. Test of reading vocabulary rather than of active vocabulary. Can be used to diagnose the student's ability to use language and to guide educational endeavors.

2. **Briggs Dictionary Test:** T. H. Briggs, Teachers College, Columbia University. 1923. Publisher, G. C. Marian & Co.; Supplied by American Book Company. Time required to give to 7th grade pupils is 2 hours and about 80 minutes for those in the 12th. This is not a speed test.

Purpose: To test familiarity with use of dictionary. Key provided. No standards given.

3. **Technical Vocabularies by Subjects:** Publisher, Public School Publishing Company, Bloomington, Ill. The tests are as follows: (1) Grammar and Composition (English, French, Latin, German), a test of four pages, 40c for a package of 35; (2) Literature, 8 pages, 75c for 35 copies; (3) Arithmetic, 4 pages, 40c for 35; (4) Algebra and Geometry, 8 pages, 75c for 35; (5) History, 8 pages, 75c for 35; (6) General Science, 16 pages, $1.50 for 35; (7) Biology, 16 pages, $1.50 for 35; (8) Chemistry, 16 pages, $1.50 for 35; (9) Geography, 12 pages, $1.10 for 35; (10) Physics, 12 pages, $1.10 for 35; (11) Physiology, 12 pages, $1.10 for 35, (12) Home Economics, 16 pages, $1.50 for 35; (13) Manual Training, 8 pages, 75c for 35; (14) Art, 40c for 35; (15) Music, 4 pages, 40c for 35. Sample of any one section, 5c. Sample set of all sections, 75c.

Purpose: Diagnostic tests to determine specific weaknesses of a class or an individual student. These lists are catalogues of the important concepts in each subject. From the results teachers will find out the terms

which a student does not know and so will have a valuable indication of the topics on which the student needs help.

3. Foreign Languages (Modern)

a. German

1. **Placement Test in German:** C. M. Purin and Ben D. Wood, Columbia University. Publisher, Teachers' College, Columbia University.

Purpose: To establish bases for placement of the pupils in a class.

2. **American Council German Tests:** Prepared for the Modern Foreign Language Study, under the auspices of the American Council on Education and the Conference of Canadian Universities, 1925, by Henmon (vocabulary), Purin and Wood-Purin, (comprehension), Van Wagenen-Hubman (reading scales), and Morgan and Purin (grammar completion). Publisher, World Book Company, Yonkers-on-Hudson, N. Y.

Purpose: To measure achievement in the pupil's progress in vocabulary, comprehension, reading and grammar. For further information, address **The Modern Language Bulletin,** quarterly. Editor: George W. H. Shield, 1240 South Main Street, Los Angeles, Cal.

b. French

1. **Comprehension and Grammar Test A: French:** C. H. Handschin, Miami University. World Book Co. 1919. $1.00 per 50, including key; Grades tested, 1st year classes in High School French; Time required, 10 minutes.

Purpose: Diagnosis of difficulties in French grammar. Is composed of six easy French sentences. Each sentence has a blank to be filled by the pupil. He studies these, then rewrites them on the reverse side, changing them as to person, number and tense.

2. **Handschin's Silent Reading Test A: French:** C. H. Handschin, Miami University. World Book Co. 1919. $1.00 per 50; Grades tested, 1st and 2nd years of High School or University; Time required, 5 minutes.

Purpose: To measure pupil's ability. The test is composed of twelve exercises. Each contains a statement followed by a question. Pupil's answer is to be given in French. Sentences are arranged in order of difficulty.

3. **Henmon's French Tests:** V. A. C. Henmon, University of Wisconsin. World Book Co. 1921. 50c per package; Grades tested, after at least first year of French has been studied; Time required, 8 minutes for vocabulary, 12 minutes for sentences.

Purpose: To measure pupil's ability to reproduce sentences including vocabulary and grammatical principles studied. It is composed of two parts: (1) French Vocabulary Tests A and B, (2) French Sentence Tests I and II.

4. **Placement Test in French:** Ben D. Wood, Albert A. Meras and Suzanne Roth, Columbia University. Publisher, Teachers' College, Columbia University, N. Y.

Purpose: The results of this test indicate the placement of the pupil in vocabulary, comprehension and grammar.

5. **Iowa Placement Examinations in French:** Van der Beke and G. D. Stoddard, University of Iowa, Iowa City, Iowa. Publisher, State University Press, Iowa City, Iowa, 1925.

Purpose: To give a measure of the pupil's achievement in vocabulary, grammar and silent reading, so as to enable the teacher to better place him in the group where he belongs.

6. **Achievement Tests in Vocabulary: French:** Lawrence A. Wilkins, Director, Modern Language Department, New York High Schools 1924. Published in Supplement to **Petit Journal,** Doubleday, Page & Co., Garden City, N. Y.

Purpose: To measure achievement in extent of vocabulary, idioms, verbs, grammar, pronunciation, comprehension and composition. Part I is the Elementary Test and Part II, the Advanced Test.

7. **American Council French Tests:** Prepared for the Modern Foreign Language Study, under the auspices of the American Council on Education and the Conference of Canadian Universities, 1925. Part I, the Vocabulary and Grammar test, prepared by V. A. C. Henmon and Algernon Coleman. Part II, the Silent Reading and Written Composition test prepared by Algernon Coleman. Publisher, World Book Company, Yonkers-on-Hudson, New York.

Purpose: To test achievement in silent reading, composition, grammar and extent of vocabulary. Each part consists of a four page booklet with space for data regarding the pupil taking the test. For further information, address **The Modern Language Bulletin,** quarterly. Editor: George W. H. Shield, 1240 South Main Street, Los Angeles, California.

c. Spanish.

1. **Handschin's Modern Language Tests: Reading Test A: Spanish:** C. H. Handschin. Miami University. World Book Co. 1919. $1.00 for 50, plus postage; Grades tested, 1st and 2nd years of High School Spanish; Time required, 5 minutes.

Purpose: To measure pupil's ability in elementary Spanish. The test is composed of two short connected paragraphs in Spanish. The class reads it; then on the reverse side of paper, answers in Spanish or English the ten questions asked.

2. **Achievement Tests in Vocabulary: Spanish:** Lawrence A. Wilkins, Director, Modern Language Department, New York High Schools. Published as Supplement to **El Eco,** Doubleday, Page & Co., Garden City, New York, 1924. Part I, Elementary; Part II, Advanced.

Purpose: To measure achievement in vocabulary, idioms, verbs, grammar, comprehension and composition.

3. **Placement Test in Spanish:** Ben D. Wood, Columbia University. Published by Teachers' College, Columbia University.

Purpose: To measure ability in vocabulary, comprehension and grammar so as to enable the teacher to place the pupil where he belongs.

4. **Iowa Placement Examination in Spanish:** Van der Beke and G. D. Stoddard, University of Iowa. Publisher, State University of Iowa Press, Iowa City, Iowa.

Purpose: To place the pupils according to their scores on the several parts of the test, in vocabulary, silent reading and grammar.

5. **American Council Spanish Tests:** Prepared for the Modern Foreign Language Study, under the auspices of the American Council on Education and the Conference of Canadian Universities, 1925, by Russell (a full battery of tests), and Cartwright (a vocabulary test). Publisher, World Book Company, Yonkers-on-Hudson, N. Y.

Purpose: To measure achievement in the various divisions of foreign language study. For further information, address **The Modern Language Bulletin,** quarterly. Editor: George W. H. Shield, 1240 South Main Street, Los Angeles, California.

4. Foreign Language (ancient)
a. Latin.

1. **White Latin Test:** Dorrance S. White. Publisher, World Book Company, Yonkers-on-Hudson, New York. Either Form A or Form B in package of 25 booklets including a manual of directions, 1 key and 1 class record, $1.20. Specimen set of 1 examination, 1 key, 1 manual of directions and 1 class record, 20c postpaid. Test first, second, third and fourth year Latin students.

Purpose: To measure growth in knowledge of Latin. Test consists of two parts; part I, a vocabulary test of 100 words selected according to frequency of occurrence, and part II, a test in translation of sentences of increasingly difficult syntax. Scores may be used as basis for dividing students into sections according to ability. Tentative semester norms are available for each year.

2. **Godsey's Diagnostic Latin Composition Test: Forms I and II:** Edith Godsey. W. L. Carr, Oberlin College, Oberlin, Ohio. Published, Form I, May 1922; Form II, April 1923. $1.00 per 100; Grades tested, second to eighth semester of High School Latin; Time required, 30 minutes.

Purpose: Diagnostic. It is composed of three sections of exercises, each with rules governing each correction.

3. **Henmon's Latin Tests:** V. A. C. Henmon, University of Wisconsin. World Book Co. 1917. (1, 2, 3, 4, and X) per package of 25, 50c, sample, 10c; 9-12, Grades tested; Time required, 8 minutes for vocabulary, 12 minutes for sentences.

Purpose: To measure pupil's ability in vocabulary and sentence construction. The tests are composed of vocabulary and sentence tests. There are five vocabulary tests: A, B, C, D, and X, and four sentence tests.

4. **Latin Vocabulary Tests:** P. R. Stevenson. Public School Publishing Company, Bloomington, Illinois. 1923. 50c per package, either I, II, or III, sample set, 15c; Grades tested, no information; Time required, no information.

5. **Latin Derivative Test:** P. R. Stevson and W. W. Coxe, Ohio State University. Publisher, Public School Publishing Company, Bloomington, Ill. Comes in three forms. Form I, Form II, and Form III are 50c a package of each including 25 tests, a direction sheet and a scoring key. Sample set, 15c.

Purpose: To see if the pupils can recognize the Latin in English words. The pupils look at each English word given and think of the Latin word or words from which the English syllables may be derived. Then in a column of Latin words the pupil underscores the one which forms an important part of the English word.

6. **Ullman-Kirby Latin Composition Test:** B. L. Ullman—T. J. Kirby, (Ullman) University of Kansas, (Kirby) University of Iowa. Publisher, Extension Division, University of Iowa, Iowa City, Ia. 1922. $1.00 per 100; Grades tested, all high school pupils after the end of the second semester's work; Time required, 30 minutes.

Purpose: To measure comprehension. The test is composed of ten paragraphs with questions on each.

7. **Latin Syntax Test:** S. L. Pressey, Ohio State University. Publisher, Public School Publishing Company, Bloomington, Ill. Package of 25 tests with one direction sheet, 50c. Sample set, 10c.

Purpose: To test knowledge of syntax; a very easy test to give and to score.

5. Social Science.

a. Ancient History

1. **A Scale in Ancient History:** L. W. Sackett, University of Texas, Austin, Texas. 1919. Cost, no information; Grades tested, class in Ancient History; Time required, 45 minutes.

Purpose: To test information of pupils. The scale is composed of eight tests: (1) Men-events, (2) Identifying prominent leaders, (3) Giving historical significance of events, (4) Identifying the participants in important battles, (5) Events-dates, (6) Contribution to civilization by ten different peoples, (7) Identifying racial stock of ten different peoples, (8) Location of ten important geographical points in ancient history.

b. American History

1. **Barr's Diagnostic Test in American History:** A. S. Barr. Public School Publishing Co., Bloomington, Ill. 1918. $4.00 per 100, each series A and B, sample 20c or 5c each in small quantities; Grades tested, 11 and 12; Time required, 30 minutes of working time.

Purpose: Diagnostic. It is composed of two series, 2A and 2B, similar in construction and arrangement, and of equal difficulty. It is composed of six tests, (One practice and five regular). Regular tests are, (1) Comprehension,

(2) Chronological judgment, (3) Historical evidence, (4) Evaluation of facts, (5) Casual relationship.

2. **The Hahn History Scales:** H. H. Hahn. Publisher, H. H. Hahn, State Normal School, Wayne, Nebraska, also Public School Publishing Co., Bloomington, Illinois. 1920, revised, 1922. 20c per single copy, three or more copies, 16c each; Grades tested, 7 and 8; Time required, not "time limit" test, depends upon number of exercises.

Purpose: To measure pupil's information, comprehension and judgment in American history. The scales are arranged in 25 steps or columns of increasing difficulty, containing from one to several exercises, two distinct scales, (1) Seventh, (2) Eighth.

3. **Pressey-Richards American History Test:** L. C. Pressey and Richards, Ohio State University. Publisher, Public School Publishing Company, Bloomington, Ill. $2.00 per 100. Tests grades 6-12.

Purpose: To provide in one form the four requirements for understanding of history: (1) Character judgment, (2) Historical vocabulary, (3) Sequence of events, and (4) Cause and effect relationship. The test is easy to give and to score.

4. **Van Wagenen's American History Scales:** J. M. Van Wagenen, University of Minn. Publisher, Bureau of Publications, Teachers College, Columbia University. 1919. $1.25 per 100, 15c per sample; Grades tested, 4 to 8; Time required, no information.

Purpose: To measure information, thought and character-judging of pupil. The scale is composed of three tests: Information (Scale A and Scale B); Thought (Scale A and B); Character-judging (Scales A, B, and C).

5. **Gregory Test in American History:** Dr. C. A. Gregory, University of Cincinnati, Cincinnati, Ohio. Publisher, Dr. C. A. Gregory, University of Cin-Cincinnati, Cincinnati, Ohio. Publisher, grades 8 to 12. $3.50 for 100 test booklets including class record sheets and score cards. In quantities less than 100, 4c per copy and 5c extra for score card and class record sheet. Specimen set, 10c. Time required to give, about 40 minutes.

Purpose: To measure accomplishment in American History. Consists of 100 questions and problems, 40 of which are miscellaneous facts and dates, and the other 60 deal with the more fundamental phases of the subject. Scoring purely mechanical. More than mere information is required to pass the test with a high score, since reasoning ability is involved.

c. Citizenship

1. **Upton-Chassel Scale for Measuring Habits of Good Citizenship:** Siegrid Marie Upton, Teachers College, Columbia University, and Clara F. and Laura M. Chassel, Ohio State University, Publishers, Bureau of Publications, Teachers College, Columbia University, New York City. 1918, revised, 1922. 45c per 100 scales; Grades tested, elementary school; Time required, no information.

Purpose: To measure pupil's progress in forming attitudes and habits of good citizenship. Each scale resembles a score card, consists of 24 items or points for consideration in rating a pupil. The values are 0 to 3.

2. **The Payne Analysis of Instruction for Habits and Practices in Health and in Accident Prevention:** E. G. Payne, Harris Teachers' College, St. Louis, Mo. Publisher, Public School Publishing Company, Bloomington, Ill. For grades 1 to 12. 10c per single copy. $5.00 per 100 with paper covers.

Purpose: To measure personal and social behavior in terms of health, habits and the extent to which the individual taking the test is acquainted with accident prevention.

3. **Downey Individual Will-Temperament Test:** June E. Downey, University of Wyoming, Laramie, Wyo. Publisher, World Book Company, Yonkers-on-Hudson, New York. 1920. $1.00 for package of 25 examination

booklets of 4 pages each; 35 cents per package of 25 record cards; 20c for manual of directions; specimen set of 1 test, 1 record card and 1 manual of instructions for 25c. No apparatus required.

Purpose: To determine the temperamental traits through motor reactions. Judge innate force, self-confidence, adaptability, power of restraint, patience in detailed work, and other qualities important to success in life.

4. **Downey Group Will-Temperament Test:** June E. Downey, University of Wyoming, Laramie, Wyo. Publisher, World Book Company, Yonkers-on-Hudson, New York, 1920. $1.40 per package of 25 examination booklets; 35c per package of 25 record cards; manual of directions, 15c; specimen set containing 1 test, 1 record card and 1 manual for 20c postpaid.

Purpose: Same as Individual Will-Temperament Test adapted for use in testing groups.

5. **Tests for Tendencies of Potential Delinquency:** A. S. Raubenheimer, University of Southern California. Published by the Psychological Review Company, Princeton, N. J. Psychological Monograph No. 159. "An Experimental Study of Some Behavior Traits of the Potentially Delinquent Boy."

Purpose: The development of a method of analysis whereby some of the delinquent tendencies in boys could be determined prior to the crystallization of such tendencies and desires into permanent habits of thought and action.

6. Home Economics

a. General

1. **Goodspeed-Dodge's Home Economics Test:** Helen Goodspeed and Bernice Dodge. Publisher, Parker Company, Madison, Wis. 1922. 75c per 100, single copy, 5c; Grades tested, secondary schools; Time required, 2½ minutes.

Purpose: To measure judgment in Home Economics. It is composed of sixteen exercises. Each exercise is composed of a statement with three reasons, all of which are true. One reason is more important than the others.

b. Foods

1. **A Measuring Scale in Foods:** Florence B. King. Publisher, Bureau of Cooperative Research, Indiana University, Bloomington, Indiana. 1922. Preliminary forms only are ready for distribution; Grades tested, Junior-Senior High Schools.

Purpose: To aid in standardizing subject matter in classification of pupils and in grading as an aid to an objective. It is composed of 78 exercises, divided into three parts. Design of test is simply checking method of right and wrong.

2. **Information Test on Foods:** A. B. Robinson, A. H. Hess, Georgianna Lord, and Mabel Trilling. Publisher, Public School Publishing Company, Bloomington, Ill. 1924. Per package of 25, with one key, 75c. Sample set, 10c.

Purpose: To test knowledge of foods and their constituents; judgment and understanding of ways and means of preparing food. 100 questions arranged under 14 heads.

c. Sewing.

1. **Murdoch's Analytical Sewing Scale for Separate Stitches:** Katharine Murdoch, Punahou School, Honolulu, Hawaii. Publisher, Bureau of Publication, Teachers College, Columbia University. 1922.

Purpose: To measure pupil's own work and to measure separately, the fine sewing stitches. It is a supplement to "Murdoch Sewing Scale."

2. **Murdoch's Sewing Scale:** Katharine Murdoch, Punahou School, Honolulu, Hawaii. Publisher, Bureau of Publications, Teachers College, Columbia University. 1919. $1.00 per single copy, only one needed; Grades tested, 2 to 12; Time required, no information.

Purpose: To measure pupil's progress. It is composed of fifteen sewing

samples arranged in the order of merit. Values range from 0 to 16.4.

7. Mathematics

a. General Mathematical Ability

1. **Rogers' Test for Diagnosing Mathematical Ability:** Agnes L. Rogers, Goucher College. Publisher, Bureau of Publication, Teachers College, Columbia University. $9.00 per 100, sample, 10c; Grade tested, 9; Time required, 1½ hours.

Purpose: Diagnostic. There are six tests as follows: (1) Superposition, (2) Algebra computation, (3) Interpolation, (4) Geometry, (5) Mixed relation, 6) Trabue language completion scales J and L.

Assumes a semester of study of algebra and of intuitive geometry. Provides a means of classifying groups on the basis of mathematical ability and of predicting success or failure in Senior High School mathematics courses.

b. Algebra

1. **Douglas' Series of Diagnostic Tests for First-Year Algebra:** H. R. Douglas. Publisher, C. A. Gregory, University of Oregon, Eugene, Ore. 1921. $1.60, folders for Series A, per 100, $3.50, Set of 7 tests, Series B, $2.50, set of 5 tests, Series B; 3c each records sheets of Series A, Series B, 3c each or one complete copy, key and directions, 15c; Grades tested, grade 9; Time required, Series A, 40 minutes for either form, Series B, 12-15 minutes.

Purpose: To measure accuracy or power and not rate of speed. Tests are composed of two series, A and B, each containing two forms either of which may be used. Each form is composed of four tests of four problems each.

2. **Hotz's Algebra Scales:** Henry G. Hotz, University of Arkansas. Publisher, Bureau of Publication, Teachers College, Columbia University. 1918. 70c per 100, graph scale, $1.25 per 100, Manual of Directions for first year Algebra, 75c; Grades tested, first year; Time required, not a "time limit" test.

Purpose: To indicate attainment and measure progress of pupils. The scales are composed of five different tests, (1) Addition and subtraction, (2) Multiplication and division, (3) Equation and formula, (4) Graphs, (5) Problems.

3. **Illinois Standardized Algebra:** W. S. Monroe and L. W. Williams, (Monroe) University of Illinois Publisher, Public School Publishing Co., Bloomington, Ill. 1920. $2.50 per 100; Grades tested, secondary schools; Time required, 4-10 minutes for each of four tests in a set.

Purpose: To measure speed and accuracy in finding the unknown. There are four separate tests of increasing complexity. The unknown X is to be found in each problem.

c. Arithmetic

1. **Buckingham's Scales for Problems in Arithmetic:** B. R. Buckingham. Public School Publishing Company, Bloomington, Illinois. 1919. 80c per 100, each Division, I, II, III; Grades tested, 3 to 8; Time required, not more than 60 minutes, not "time limit" tests.

Purpose: To measure reasoning ability of pupil. The scale is composed of three tests, (1) Grades 3 and 4, (2) Grades 5 and 6, (3) Grades 7 and 8. Each division is composed of two equivalent forms of ten problems each, arranged in order of difficulty.

2. **Otis Arithmetic Reasoning Test:** Arthur S. Otis, Test Editor, World Book Co. Publisher, World Book Company, Yonkers-on-Hudson, New York. In two forms, A and B. Package of 25 of any one form, including 1 key, 1 class record, and 1 directions for giving test, 40c. Specimen set, 10c postpaid. Includes 1 copy of each form, 1 copy of directions, 1 key and 1 class record. For grades 4 to 9. Test 5 of the Otis Group Intelligence Scale. Time required is from 20 to 30 minutes.

Purpose: To determine the extent of reasoning in arithmetic.

3. **Stevenson Arithmetic Problem Analysis Tests:** P. R. Stevenson, Bureau of Educational Research, Ohio State University, Columbus, Ohio. Publisher, Public School Publishing Company, Bloomington, Ill. 1923. In two forms, Test I and Test II. Test II for grades 7 to 9 inclusive. $1.00 per package of 100. Single copies, 1¼c. Specimen set of either form, 10c. Specimen set of both forms, 15c.

Purpose: To test ability to analyze problems in arithmetic before making numerical computations. Each problem requires an analysis to determine the facts that are given, what is to be found out, the approximate size of the numerical answer and the arithmetical process to be used.

4. **Monroe's Diagnostic Tests in Arithmetic:** W. S. Monroe, University of Illinois. Publisher, Public School Publishing Co., Bloomington, Ill. 1917. 80c for each part; Grades tested, 4 to 8; Time required, varies with grades from 30 seconds to 4 minutes, for each separate test.

Purpose: Diagnostic. The tests are composed of four parts on separate folders, each part including from 4 to 6 tests. Part I, including Tests 1 to 6, "Operation with integers," Part II, including Tests 7 to 11, "Operations with integers," Part III, including Tests 12 to 16, "Operations with common fractions." Part IV, Tests 17 to 21, "Multiplication and Division of decimal fractions."

5. **Monroe's Standardized Reasoning Tests in Arithmetic:** W. S Monroe. University of Illinois. Public School Publishing Co., Bloomington, Ill. 1918. Test I, grades 4 and 5, 80c; Test II, grades 6 and 7, 80c; Test III, grade 8, 80c per hundred; Grades tested, 4 to 8; Time required, not more than 25 minutes.

Purpose: To measure ability to reason in Arithmetic. Speed can be measured, although not primarily speed tests. The tests are composed of 15 problems each: Test I, grades 4-5, Test II, grades 6 and 7, Test III, grade 8. Scoring is based on both correct principle and answer.

6. **Studebaker Economy Practice Exercises in Arithmetic:** John W. Studebaker, Supt. of Schools, Des Moines, Iowa. Scott, Foresman & Company, Chicago, Ill. 1916. Set B-1 for city schools, 50 exercises and 930 cards, $18.00, assorted per 100, $2.50; Grades tested, 4 to 8; Time required, varies with grade, 4 to 7 minutes each.

Purpose: To measure and increase pupil's ability in the fundamentals of Arithmetic; are primarily teaching devices.

7. **Woody's Arithmetic Scales: Series A and B:** Clifford Woody, University of Michigan. Publisher, Bureau of Publications, Teachers College, Columbia University. 1916, revised 1920. 50c for each scale, manual of directions, 60c; record sheet for 50 pupils, 3c each, answer cards, 5c each; Grades tested, addition and subtraction in 2-8 grades, multiplication and division scales, grades 3-8; Time required, 20 minutes.

Purpose: To measure achievement of a group, class or entire school system. The scales are composed of two series, A and B. Each series is composed of four scales, one for each of the four fundamentals.

8. **Woody-McCall's Mixed Fundamentals:** Clifford Woody, University of Michigan, and Wm. A. McCall, Teachers College, Columbia University. Publisher, Bureau of Publications, Teachers College, Columbia University. 1916. 60c per 100, $5.50 per 1000; Grades tested, 3 to 8; Time required, 20 minutes.

Purpose: Diagnostic. The tests are composed of two forms, equivalent and interchangeable.

d. Geometry

1. **Webb Geometry Tests:** Paul E. Webb, Glendale Union High School, Glendale, Cal. Publisher, Public School Publishing Company, Bloomington, Ill. 1925. Price furnished by publisher for Series A or B per hundred. Grade tested, 10th. Time required not stated.

Purpose: To test achievement of pupil in geometrical construction, knowledge of simple, typical exercises and familiarity with geometrical truths and principles. The test consists of four parts, (1) a completion test, (2) a true-false exercise, (3) several simple exercises involving no paper work, and (4) some construction problems.

8. Music

1. **Beach's Standardized Music Tests:** Frank A. Beach, Kansas State Normal School. Publisher, Bureau of Educational Measurements and Standards, Emporia, Kansas. 1920. $2.00 for 50 copies; Grades tested, 2 to 12; Time required, 90 minutes.

Purpose: To measure achievement of pupil. The tests are composed of 62 questions on five different phases of music as follows: (1) Symbols, (2) Ear training, (3) Eye training, (4) Ear and Eye training, (5) Sight reading, (6) Writing, (7) Visualization and (8) Sight-singing.

2. **Courtis Series M, Recognition of Characteristic Rhythm:** S. A. Courtis, Dept. City Schools, Detroit, Mich. Publisher, S. A. Courtis, 1807 East Grand Blvd., Detroit, Mich. 1922. $2.50 per 80, $1.80 per 40; Grades tested, 4 to 12. Time required, no information.

Purpose: To measure pupil's ability to interpret life's activities and moods in terms of music. The tests are composed of two separate tests, I and II; the first expresses characteristic activities, and the second, moods of thought.

3. **Measures of Musical Talent:** Carl E. Seashore, Iowa University. Publishers, Silver Burdett and Co., and Iowa University, Iowa City, Iowa. Published off and on for years. Manual, 25c; Grades tested, 5 to 8; Time required, to give group test, 3 class periods or less; to score, 10 minutes.

Purpose: Prognostic. The test is based on five measures by using phonograph records designed for the purpose, (1) the sense of pitch, (2) the sense of intensity, (3) the sense of time, (4) the sense of consonance, (5) the tonal memory. The sense of pitch is regarded as being of greatest value.

4. **The Kwalwasser-Ruch Test of Musical Accomplishment:** Jacob Kwalwasser and G. M. Ruch, State University of Iowa. Publisher, Extension Division, University of Iowa, Iowa City, Iowa. $5.00 per package of 100 tests, including a manual of directions and a scoring key. In quantities less than 100, 6c per copy. Test grades 4 to 12. Specimen set, 15c. Time required to give group test is 40 minutes.

Purpose: To test the accomplishment of pupils along these lines: (1) Knowledge of musical terms and symbols, (2) Recognition of familiar melodies from notation, (3) Key signatures (major and minor), (4) Time signatures, (5) Pitch and syllable names, (6) Sight reading, (7) Musical imagery and memory. Carefully derived standards permit objective comparisons.

9. Physical Education.

1. **Athletic Badge Tests for Boys and Girls:** Publishers, Playground and Recreation Association of America, 1 Madison Ave., New York City. $2.50 per 100; Grades tested, 7-12; Time required, 15 minutes.

Purpose: To give physical training for boys and girls. The tests are usual field sports.

2. **Baldwin's Physical Development Scale:** B. T. Baldwin, University of Iowa, 1916. Publisher, Extension Division, University of Iowa, Iowa City, Ia. For secondary schools. Time to give, 30 minutes; time to score, 2 minutes. 10c per set for the scale, a buff card for girls and white card for boys. Paper measuring scale, 60c.

Purpose: To measure the development of individual pupils. This scale was devised after wide experimentation and standards are available.

10. Science

a. General

1. **Ruch-Popenoe General Science Test:** G. M. Ruch, University of Iowa, and H. F. Popenoe. Publisher, World Book Co. 1923. $1.50 per pack-

age of 25, forms A and B; specimen, 25c; Grades tested, general science classes; Time required, 40-45 minutes.

Purpose: Information test. The test is composed of two parts. Part I is composed of 50 exercises. Part II consists of 20 diagrams.

Primarily to measure accomplishment in the study of General Science; also serves as a means of classifying into ability groups.

2. **Dvorak General Science Tests:** August Dvorak, University of Washington. 1924. Publisher, Public School Publishing Company, Bloomington, Ill. 50c per package of 25 test sheets. Quantities less than 25, 2½ cents per copy. Specimen set, all forms, 20c. Issued in three forms, R-1, for use early in year; S-2 and T-2, which are of equal difficulty, are used to measure progress.

Purpose: To supply a means of diagnosis and classification of pupils. To measure scientific information. The three forms are comprehensive and may be used at intervals determined by the teacher. Standards are available for each half year.

b. Biology

1. **Grier's Range of Information:** N. M. Grier, Hollins College. Publisher, N. M. Grier, Hollins College, Hollins, Va. 1918. Price not stated.

Purpose: Diagnostic. It is composed of three parts, 1) Physiology, (2) Zoology, (3) Botany.

2. **Ruch-Cossman Biology Test Form B:** G. M. Ruch, University of Iowa, and Leo Cossman. Publisher, Bureau of Educational Research, University of Iowa, Iowa City, Ia. 1922. Preliminary forms available without cost; Grades tested, 10 or any grade in which biology is taught; Time required 45 minutes.

Purpose: To measure pupil's ability in biology. The test is composed of five separate tests covering a broad range of work in biology.

3. **Information Exercises in Biology:** J. L. Cooprider. Publisher, Public School Publishing Company, Bloomington, Ill. 50c per package of 25 tests and a direction sheet. Sample set, 10c.

Purpose: Six exercises including (1) test on completion of sentences, (2) recognition of true and false statements, (3) test of information or knowledge of biological terms, (4) test of reasoning ability, (5) classification of terms, (6) logical selection.

c. Chemistry

1. **Chemistry Scales A and B:** S. R. Powers, University of Iowa. World Book Co. 1922. 2½c per single copy; Grades tested, classes in general chemistry; Time required, 18 minutes for Scale A, 15 minutes for Scale B.

Purpose: It is given as information test in general chemistry and consists of two scales, A and B. Scale A is composed of thirty exercises. Scale B is composed of sixty statements on general chemistry.

2. **Jones' Union Science Tests in Chemistry:** Franklin T. Jones, Cleveland, Ohio. Publisher, The University Supply and Book Co., 10109 Wilbur Ave., Cleveland, Ohio. 1918. 15c per test set; Grades tested, first year chemistry classes; Time required, 2 to 10 minutes per test.

Purpose: It is given for practice and comparison. There are ten separate tests as follows: (c1) Names and symbols of selected elements, (c2) Selection of elements in groups, (c3) Oxides of elements, (c4) Hydroxides of elements (c5) Salts of metals, (c6) Meaning of symbols, etc., (c7) Valence, (c8) Chemical effect of heat (c9) Chemical effect of various agents, (c10) Naming of acids and salts.

3. **Rich's Chemistry Test:** S. G. Rich. 1923. Publisher, Public School Publishing Company, Bloomington, Ill. Issued in forms Gamma and Epsilon. $1.00 per package of 25 of either form. Quantities less than 25, 5c per copy. Teachers' manual for giving test and scoring papers, 15c. Specimen set, either form, 20c postpaid.

Purpose: To measure attainment in (1) ability to think, (2) information,

(3) ability to solve numerical problems, and (4) habits and knowledge acquired from work in the laboratory. The tests are carefully prepared both as to subject matter and its arrangement. Standards available for attainment from the middle of the first semester of study through the fourth semester of work.

d. Botany

1. **Michigan Botany Test:** O. W. Laidlaw and Clifford Woody, University of Michigan. Standardized through the Bureau of Educational Reference and Research, School of Education, University of Michigan. Publisher, Public School Publishing Company, Bloomington, Ill. Consists of four forms: Test I, Test II, Test III, and Test IV. $1.00 per package of 25 and a direction sheet. Sample set, 15c.

Purpose: Test I is made up of "yes" and "no" questions; Test II is of the multiple choice type; Test III consists of a column of descriptive phrases which the student tries to match up with terms given in another column; Test IV tests the reasoning ability of the pupils.

e. Geography.

1. **Hahn-Lackey Geography Scale:** H. H. Hahn and E. E. Lackey. Publisher, H. H. Hahn, State Normal School, Wayne, Nebraska. 1922. 16c each, up to 100 copies; over 100, 12c each; single copies of score key, 5c; Grades tested, 4 to 8, inclusive; Time required, depends upon number of exercises used for test.

Purpose: Diagnostic of pupil's ability and also for measuring class achievement. The scale is composed of 224 exercises arranged in twenty-three columns as steps; steps are of approximate difficulty.

2. **Posey-Van Wagenen Geography Scales: Divisions I and II:** M. J. Van Wagenen, University of Minn. Public School Publishing Co., Bloomington, Ill. 1922. $1.50 per 100, each division, single copy, 20c; Grades tested, 5 to 8, inclusive; Time required, 40 minutes.

Purpose: To measure pupil's ability in geography. There are two separate scales. The Information Scale R is composed of 30 exercises and the Thought scale S is similar.

3. **Buckingham-Stevenson Place Geography Tests:** B. R. Buckingham, Director, Bureau of Educational Research, Ohio State University, Columbus, Ohio, and P. R. Stevenson, Ohio State University, Columbus, Ohio. Publisher, Public School Publishing Company, Bloomington, Ill. 1922. Booklet form with 6 class record sheets, 20c. Booklet without record sheets, 15c; extra record sheets, 1c each. For Junior High School.

Purpose: To test familiarity of class with places in the United States and the World. There are six forms of this test, three for the United States and three for the World. Teacher dictates from the booklet, so test can be made as long as she desires.

4. **Gregory-Spencer Geography Tests:** C. A. Gregory and Peter Spencer, University of Cincinnati, Cincinnati, Ohio. Publisher, Dr. C. A. Gregory, U. of Cincinnati, Cincinnati, Ohio. 1922. $4.00 per package of 100 test booklets with score cards and record sheets. In quantities less than 100, 5c extra for score card and class record sheet. Specimen set of any one form, 10c; all three forms, 30c. For grades 6, 7, 8, and normal school students.

Purpose: To test the geography which the pupils are being taught, rather than what they ought to be taught. Forms A, B, and C may be used. No interpretation is needed by the teacher, hence the personal equation is entirely eliminated. The phraseology used in the tests is like that used in textbooks. Tests cover trade routes and their products, casual geography, place and description geography, physical, commercial and human geography, map study, causes of day and night, wind systems, and other features.

f. Physics

1. **Camp's Iowa Physics Tests:** H. L. Camp, University of Iowa. Publish-

er, Extension Division, University of Iowa, Iowa City, Iowa. 1920. $1.25 per 100; Grades tested, first year physics; Time required, 40 to 50 minutes.

Purpose: To measure pupils' knowledge of principles in physics and their ability to apply them. It consists of three scales of eleven or twelve questions each, (1) mechanics, (2) heat, (3) electricity and magnetism.

2. **Jones' Union Science Test in Physics:** Franklin T. Jones, Cleveland, Ohio. Publisher, University Supply and Book Co., 10109 Wilbur Ave., Cleveland, Ohio. 1918. 25c per set, in sets of 27 tests; Grades tested, High School grades 11 and 12; Time required, 2½ to 12 minutes per test of 21 tests.

Purpose: For comparison of class groups. The tests are composed of 14 tests on heat, 3 on electricity, 2 on sound, and 2 on light.

3. **New Types of High School Physics Tests for Instructional Purposes:** Earl R. Glenn and E. L. Obourn, (Glenn, Lincoln School, Teachers College, Columbia University). Publishers, E. Glenn and E. Obourn, 425 West 123rd St., New York City. 1919-20, revised, 1922-23. Cost, not yet determined; Grades tested, High School physics; Time required, 10 to 40 minutes.

Purpose: It is given as a teaching device as well as for test purposes. The tests are composed of 27 tests, designed to cover all of the topics usually taught during the High School physics course.

C. Classification

1. **Stanford Achievement Test:** Truman L. Kelley, G. M. Ruch, and Lewis M. Terman, Stanford University. Publisher, World Book Co. 1922. 8c per single copy; specimen sets, 50c; Grades tested, 4 to 8; Time required, 148 minutes.

Purpose: The battery of tests includes tests in Paragraph Meaning, Sentence Meaning, and Word Meaning in Reading; Computation and Reasoning in Arithmetic; Nature Study and Science; History and Literature; Language Usage; Dictation Exercise. These tests may be given all at one time or each test may be given separately. The composite score provides an exceptionally reliable basis for use in classification of pupils. Again each test may be given separately and used for diagnostic purposes.

2. **Otis Classification Test:** Arthur S. Otis, Test Editor, World Book Co. Publisher, World Book Company, Yonkers-on-Hudson, New York. 25 examination booklets of Form A or Form B for $1.10 along with 1 key, 1 interpretation chart, one percentile graph and 1 class record. Manual of directions, 25c; specimen set including manual of directions, 40c. Each part can be completed in 30 minutes and can be self-administered. For grades 4 to 8.

Purpose: To enable teacher to grade and classify pupils on basis of mental development and actual classroom achievement. Achievement test contains questions covering reading, spelling, language, grammar, arithmetic, geography, history, civics, hygiene, Vocabulary, music and art. From results examiner can secure the educational age, mental age, the I. Q., the E. Q., the accomplishment ratio and the classification index of a pupil.

II. VOCATIONAL GUIDANCE TESTS.

1. **Thurstone's Vocational Guidance Test:** L. L. Thurstone, Carnegie Institute, Pittsburg. Publisher, World Book Co. 1919. $1.00 per package of 25 for each of 5 tests; Grades tested, 12 and 13; Time required, about 30 minutes for each part.

Purpose: To determine the probability of success of High School Seniors and College Freshmen in an engineering school. There are five tests; Algebra, Arithmetic, Geometry, Physics, and Technical Information.

2. **MacQuarrie Test for Mechanical Aptitude:** T. W. MacQuarrie, University of Southern California. Tests distributed by Associated Students' Store of the University of Southern

California. Grades 7 to 12. Time, 35 minutes. Given in classroom. Tests are made of paper and sold in packages of 25 at $1.50 postpaid.

Purpose: To provide from a group performance test, a measure of native ability to do the work of a mechanic.

3. Stenquist Mechanical Aptitude Tests: John L. Stenquist, Bureau of Reference, Research and Statistics of New York City Public Schools. Publisher, World Book Company, Yonkers-on-Hudson, New York. Package of 25 of either Test I or Test II, costs $1.50, including 1 key and 1 record sheet. Manual of directions separate, 15c. Specimen set 30c, including key, manual and record sheet. For grades 6 to 12. Time varies from one to two hours.

Purpose: To predict mechanical ability. Test I consists of the pictures which deal with common mechanical objects. Pupil is required to determine mechanical relationships of common devices and simple machines. Test measures mechanical perception and ability to solve mechanical problems. Presupposes no mechanical experience.

III. RATING SCALES.

A. High School Buildings

1. A Score Card for High School Buildings: Strayer and Englehardt. See standards for high school buildings.

B. High School and College Students.

1. A Rating Scale for Judging High School and College Students: H. O. Rugg, Teachers College, Columbia University. Publisher, University Book Store, 5802 Ellis Ave., Chicago, Ill. 1918. 5c net for each, under 200; over 200, 4c each; Grades tested, High School and College students.

Purpose: To improve one's self through self-rating. Rating card is composed of two forms, A and B. Form A consists of 5 parts, as follows: (1) Ability to learn to associate new ideas, (2) Qualities of industry and attitude towards school work, (3) Qualities of learning, (4) Teamwork qualities, (5) Personal and social qualities. Form B is composed of same five points used in a different way, and the rating is by direct comparison.

C. Teachers in Service

1. Rugg's Rating Scale for Judging Teachers in Service: H. O. Rugg, Columbia University. Publisher, Harold Rugg, Lincoln School, Teachers College, New York City. 1918. 5c each net, under 200; 4c each net, over 200.

Purpose: To measure teacher's efficiency in service. The scale is composed of two forms, A and B. Form A measures by analyzing the qualities of teachers. Form B. compares the teachers under consideration with typical teachers.

2. Schutte Scale for Rating Teachers: T. H. Schutte. Publisher, World Book Company, Yonkers-on-Hudson, New York. 4-page booklet at $1.00 per package of 25.

Purpose: To assist in rating teachers by an analysis of teacher traits. The teacher is rated in five general traits: personal and social qualities, co-operative qualities, leadership, scientific and professional attitude, teaching ability. The scale is of benefit to teachers who may rate themselves.

D. Secondary School Principles

1. A Self-Rating Score Card for Secondary School Principals: Frank C. Touton, University of Southern California. Published in Journal of Educational Research, November 1923; For Secondary School Principals.

Purpose: Provides an interesting and helpful means of self-analysis for Secondary School Principals.

E. Secondary School Principal's Annual Reports.

1. Score Card for High School Principal's Annual Report: Frank C. Touton, University of Southern California. Published in The American School Board Journal, July 1923; For Secondary School Principals.

Purpose: Through the application of this card to his annual report, any

Secondary School Principal can assign to each item, such a value as represents the real worth of the annual report in this particular. The total of the several item-scores reduced to 1000-point basis represents the value of the report and to a degree the value of the service rendered to the school community.

F. Heads of Departments.

1. **Self-rating Score Card for Heads of Departments:** Frank C. Touton, University of Southern California. Published by author. (Now in press). Distributed by Associated Students' Store of the University of Southern California. For heads of departments of Junior and Senior High Schools. 25c per copy.

Purpose: The card gives evaluations for each of the following major items and their sub-items: (1) Educational and professional qualifications, (2) Personal and social qualifications, (3) Management of department, (4) Directing learning activities, and (5) Achievement of teachers and pupils. The several item and sub-item scores represent their values as determined on a 1000-point basis. Standards given are based on judgments of 100 heads of departments.

ANNOUNCEMENT

A limited number of the following publications are available and orders will be filled so long as the supply lasts:

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For Principals and Teachers of Secondary Schools. Prepared under direction of Frank C. Touton, Professor of Education, University of Southern California. A reprint from *Report of the Committee of Fifteen*. 100 pages. By mail, postage prepaid.....60c

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